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UNIVERSITY OF ALBERTA

FARMER'S ATTITUDES AND AGRICULTURAL LAND EXPANSION IN IMPROVEMENT DISTRICT 23, ALBERTA

BY

ANDREW JOHN HADEN

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

DEPARTMENT OF GEOGRAPHY

EDMONTON, ALBERTA

FALL 1990

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FARMERS ATTITUDE'S AND AGRICULTURAL LAND EXPANSION IN IMPROVEMENT DISTRICT 23, ALBERTA

SUBMITTED BY ANDREW JOHN HADEN

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

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Date: October 9, 1990

ABSTRACT

This study examines the behaviour of individual farmers and their cultural affiliations in relation to the growing agricultural region of Improvement District 23 in northwest Alberta. Growth is caused by the acquisition of new Public land for agriculture by Mennonite and non-Mennonite farmers. Conversion of this Public land to farmland creates land use change, the geographical focus of this study.

Farmers in Improvement District 23 made large acquisitions of Public land between 1984 and 1988. This study was based on the initial assumption that Mennonite farmers acquired proportionally more of this land than non-Mennonite farmers. Based on the additional assumption of social and cultural differences between Mennonite and non-Mennonite farmers, the attitudes of these two groups of farmers toward farming and Public land disposition were measured to test hypotheses. These hypotheses were struck to explain the association between the different attitudes of the two groups and their different land acquisition behaviours. Support was found for several hypotheses. The study concluded that there was an association between the different attitudes of the Mennonite and non-Mennonite farmers and their corresponding land acquisition behaviours. Further investigation showed, within the same sample, two additional groups: farmers who acquired Public and other types of land, and farmers who did not acquire land. The land acquisition behaviour of "acquiring" farmers was also found to be associated with non-attitudinal and attitudinal factors.

ACKNOWLEDGEMENTS

I would like to acknowledge and thank Professor R.G. Ironside, my thesis supervisor since January, 1987. I have benefitted greatly from his supervision, and am a better student than I was at the beginning of 1987. We started this exercise as supervisor and student, and finished as friends.

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The Fort Chipewyan - Fort Vermilion Bicentennial Research Committee provided the grant which supported my research. The Committee was a co-operative venture of Alberta Culture and Multiculturalism and the Boreal Institute for Northern Studies at the University of Alberta. Anita Moore and Simonne Rogiani of the Boreal Institute gave me much-needed help and assistance.

Several people assisted me in Improvement District 23 and in Edmonton. Mr. Jim McElgunn, Director of the Agriculture Canada Research Station at Beaverlodge, gave me permission to use the Agriculture Canada Experimental Station at Fort Vermillion as a base for my field work in the summer of 1988. While there, Mr. Ben Siemens and the staff of the Station also assisted me. District Agriculturist Mr. Paul Laflamme and the other staff members at the Alberta Agriculture office in Fort Vermilion also provided valuable assistance.

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I am grateful to those farmers in Improvement District 23 who talked to me in the summer of 1988. In particular, comments and suggestions from Mr. Eugene Dextrase of High Level helped to change my thinking and my research approach. Mr. Pete Chomiak of Rocky Lane and Mr. Jake L. Peters of La Crete sifted through more than two hundred separate Public Land dispositions to tell me which dispositions had been awarded to Mennonite farmers and to non-Mennonite farmers. It is a tribute to their knowledge of the region and its farmers that there were only four dispositions on which they disagreed.

Since November of 1989, I have completed this thesis while working full-time as a Municipal Planner with the Mackenzie Regional Planning Commission in Berwyn, Alberta. The challenge was made infinitely easier by the Commission's Executive Directors, Mr. Gerald Thomas and Mr. Tom Baldwin, who gave me permission to use the Commission's computing facilities.

I acknowledge the contributions of my fellow graduate students in the Department of Geography to this thesis. I am left with friendships that will last a lifetime.

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Finally, I wish to thank with all my heart my father, Norman Haden. His support and his love have helped to sustain me for the past three and a half years. If I dedicate this thesis to anyone, I dedicate it to him.

Andrew Haden,
Berwyn, Alberta.
October, 1990

TABLE OF CONTENTS

CHAPTER I: INTRODUCTION

1.1 Introduction 1

CHAPTER II: BACKGROUND

2.1 Introduction 6
2.2 Study Area 6
2.3 Farm Expansion and Agricultural Land Expansion 11
2.4 The Land Disposition Process 11
2.5 Agricultural Land Expansion In I.D. 23: 1984-1988 15
Notes 29

CHAPTER III: CONCEPTUAL FRAMEWORK AND HYPOTHESES

3.1 Introduction 32
3.2 Literature Reviews 34
    3.2.1 Attitudes 34
    3.2.2 Behavioural Studies in Agricultural Geography 39
    3.2.3 Mennonites 40
3.3 Conceptual Framework and Hypotheses 43
    3.3.1 Non-attitudinal variables 44
    3.3.2 Attitudes toward farming 44
    3.3.3 Attitudes toward Public land disposition 47
Notes 49

CHAPTER IV: METHODS

4.1 Introduction 50
4.2 Field-related work 50
    4.2.1 Pre-field work 50
    4.2.2 Field work 51
    4.2.3 Post-field work 54
    4.2.4 Response rates 55
4.3 Preparation of the questionnaire 57
4.4 Methods of analysis 62
    4.4.1 Preparation of data 62
    4.4.2 Statistical tests 62
    4.4.3 Levels of explanation 63
Notes 65

CHAPTER V: PRESENTATION AND ANALYSIS OF RESULTS FOR MENNONITE AND NON-MENNONITE FARMERS

5.1 Introduction 69
5.2 Quality of the sample 69
5.3 Analysis of non-attitudinal variables 72
    5.3.1 Farm-related variables 72
    5.3.2 Personal attributes 76
5.4 Analysis of attitudinal variables 85

5.4.1 Attitudes toward farming 85
5.4.2 Attitudes toward Public land disposition 85
5.5 Interpretation 91
5.5.1 Non-attitudinal variables 91
5.5.2 Attitudinal variables 94
5.6 Summary 97
Notes 102

CHAPTER VI: PRESENTATION AND ANALYSIS OF RESULTS FOR ACQUIRING AND NON-ACQUIRING FARMERS

6.1 Introduction 103
6.2 Hypotheses 104
6.3 Analysis of non-attitudinal variables 107
6.3.1 Farm-related variables 107
6.3.2 Personal attributes 108
6.4 Analysis of attitudinal variables 115
6.4.1 Attitudes toward farming 115
6.4.2 Attitudes toward Public land disposition 115
6.5. Interpretation 122
6.5.1 Non-attitudinal variables 122
6.5.2 Attitudinal variables 123
6.6 Summary 125
Notes 128

CHAPTER VII: CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions 129
7.2 Recommendations 134
7.3 Epilogue 139
Notes 142

REFERENCES 143

APPENDIX 148

LIST OF TABLES

Table 2.1 Agricultural characteristics of Improvement District 23 compared to Alberta and the Peace River region 10

Table 2.2 Types of farms in Improvement District 23 compared to Alberta and the Peace River region 12

Table 2.3 Public Land dispositions under Farm Development Leases in Improvement District 23: 1984 - 1988 18

Table 2.4 Public Land dispositions under Farm Development Leases in Improvement District 23 to Mennonite and non-Mennonite farmers: 1984 - 1988 19

Table 2.5 Special Postings in Improvement District 23: 1980 - 1988 . . . 26

Table 2.6 Average Public Land dispositions by Mennonite and non-Mennonite farmers: 1984 - 1988 27

Table 4.1 Goals and values in farming 60

Table 4.2 Classification of Public land disposition statements 61

Table 5.1 Farms classified by size: observed frequencies compared to expected frequencies 70

Table 5.2 Farmers ages: observed frequencies compared with expected frequencies 71

Table 5.3 Types of farm by Mennonite and non-Mennonite farmers . . 73

Table 5.4 Number of land acquisitions by Mennonite and non-Mennonite farmers 73

Table 5.5 Methods use in acquisitions of Other land by Mennonite and non-Mennonite farmers 74

Table 5.6 Acquisitions of Other land by Mennonite and non-Mennonite farmers: 1984 - 1988 74

Table 5.7 Average acquisitions of land by Mennonite and non-Mennonite farmers 75

Table 5.8 Financing of land acquisitions by Mennonite and non-Mennonite farmers 75

Table 5.9 Reasons for land acquisitions by Mennonite and non-Mennonite farmers 76

Table 5.10 Reasons for non-acquisitions of Public land by Mennonite and non-Mennonite farmers 77

Table 5.11 Reasons for deciding not to acquire Public land by Mennonite and non-Mennonite farmers 78

Table 5.12 Land holdings of a given type by Mennonite and non-Mennonite farmers 79

Table 5.13 Average land holdings by Mennonite and non-Mennonite farmers 80

Table 5.14 Average farm size by Mennonite and non-Mennonite farmers 80

Table 5.15 Length of farm ownership by Mennonite and non-Mennonite farmers 80

Table 5.16 Number of years farming considered a full-time occupation by Mennonite and non-Mennonite farmers 81

Table 5.17 Income by Mennonite and non-Mennonite farmers 81

Table 5.18 Off-farm work by Mennonite and non-Mennonite farmers . . 82

Table 5.19 Average number of children by Mennonite and non-Mennonite farmers 82

Table 5.20 Farming activity of farmer's children in I.D. 23 by Mennonite and non-Mennonite farmers 83

Table 5.21 Reasons for farming by Mennonite and non-Mennonite farmers 84

Table 5.22 Attitudes toward farming (individual statements): Mennonite and non-Mennonite farmers 86

Table 5.23 Attitudes toward farming (orientation categories): Mennonite and non-Mennonite farmers 88

Table 5.24 Attitudes toward farming (scale scores): Mennonite and non-Mennonite farmers 88

Table 5.25 Attitudes toward Public land disposition (individual statements): Mennonite and non-Mennonite farmers 89

Table 5.26 Attitudes toward Public land disposition (orientation categories): Mennonite and non-Mennonite farmers 90

Table 5.27 Attitudes toward Public land disposition (scale scores): Mennonite and non-Mennonite farmers 91

Table 6.1 Land holdings of a given type by acquiring and non-acquiring farmers 108

Table 6.2 Average land holdings by acquiring and non-acquiring farmers 109

Table 6.3 Average farm size by acquiring and non-acquiring farmers 109

Table 6.4 Income by acquiring and non-acquiring farmers 109

Table 6.5 Type of farm by acquiring and non-acquiring farmers 110

Table 6.6 Length of farm ownership by acquiring and non-acquiring farmers 110

Table 6.7 Number of years farming considered a full-time occupation by acquiring and non-acquiring farmers 111

Table 6.8 Off-farm work by acquiring and non-acquiring farmers . . . 112

Table 6.9 Average number of children by acquiring and non-acquiring farmers 112

Table 6.10 Farming activity of farmer's children in I.D. 23 by acquiring and non-acquiring farmers 113

Table 6.11 Reasons for farming by acquiring and non-acquiring farmers 114

Table 6.12 Attitudes toward farming (individual statements): acquiring and non-acquiring farmers 116

Table 6.13 Attitudes toward farming (orientation categories): acquiring and non-acquiring farmers 118

Table 6.14 Attitudes toward farming (scale scores): acquiring and non-acquiring farmers 118

Table 6.15 Attitudes toward Public land disposition (individual statements): acquiring and non-acquiring farmers 119

Table 6.16 Attitudes toward Public land disposition (orientation categories): acquiring and non-acquiring farmers 121

Table 6.17 Attitudes toward Public land disposition (scale scores): acquiring and non-acquiring farmers 121

Table 7.1 Attitudinal orientations of farmers in I.D. 23: Mennonite/non-Mennonite farmers and acquiring/non-acquiring farmers combined 133

LIST OF FIGURES

Figure 2.1 Agricultural Region of Improvement District 23 7

Figure 2.2 Special Postings in Improvement District 23, 1980-1989 16

Figure 2.3 Farm Development Lease Dispositions in Improvement District 23, 1984 20

Figure 2.4 Farm Development Lease Dispositions in Improvement District 23, 1985 21

Figure 2.5 Farm Development Lease Dispositions in Improvement District 23, 1986 22

Figure 2.6 Farm Development Lease Dispositions in Improvement District 23, 1987 23

Figure 2.7 Farm Development Lease Dispositions in Improvement District 23, 1988 24

Figure 2.8 Farm Development Lease Dispositions in Improvement District 23, 1984 - 1988 25

CHAPTER ONE

INTRODUCTION

1.1 Introduction

In the winter of 1975, as a young man in my late teens, I received my first introduction to the agricultural frontier in the Peace River region of Northern Alberta. At the time, I was working as a labourer with a Northern Alberta Railways bridge maintenance gang. I was befriended by Vern Jahraus, a fellow worker from High Prairie, Alberta. Vern actually lived in what was known locally as the "Banana Belt": an area of land about 50 kilometres south of High Prairie where a number of farmers were homesteading new land. Vern took me to his home in the "Banana Belt" on at least two occasions. Fifteen years later, I have two lasting memories of those visits.

Having grown up in a middle-class neighbourhood in Montreal, I was struck by the living conditions. They were not primitive but they were certainly far less comfortable than what I was used to. I was also unfamiliar with the way of life Vern had chosen for himself and his family. Vern was working five days a week for the railway and returning on weekends to work his farm. During the week, it was up to his wife and two sons to continue the farm work. Some land had been cleared for a small herd of cattle. Vern and his family were trying to clear additional land to plant crops. Since the farm alone would not support the family, Vern worked on the railway out of necessity. I was struck by the sacrifices that Vern and his family were willing to make to realize their dream of owning their own farm.

In the summer of 1981, I returned to the town of Peace River to begin a career in radio as a broadcast journalist. From then until the end of 1986, in Peace River and later in Grande Prairie, I frequently reported on agricultural stories. One agriculture-related story which I often covered was the issue of the opening of new land for agriculture by farmers. In 1983, a panel of the Environment Council of Alberta held public hearings in Grande Prairie on Maintaining and Expanding the Agricultural Land Base in Alberta. A range of briefs submitted to the panel both opposed and supported the opening of new land for agriculture.

In the summer of 1987, I had completed my first term of course work as a graduate student in the Masters program of the Department of Geography at the University of Alberta and was searching for a research topic for my Master's thesis. I had returned to school determined that the topic would be related to the Peace River region in some way. During the course of my search, I came across a report that had been commissioned by the Northern Alberta Development Council. It had been prepared by Woods Gordon, an Edmonton consulting firm. The report, The Development of New Agricultural Land in Northwestern Alberta, was an attempt to forecast the demand for new agricultural land in the Peace River region. I was struck by the report's primary conclusion: "An average annual demand for Crown land of some 154,000 acres is expected over the next 20 years from the study area" (Woods Gordon, 1983, p. 1.11). This amount represented the equivalent of 622 square kilometres of land: an amount which seemed excessive.

This conclusion, on top of my previous experiences with the agricultural frontier of northern Alberta, rekindled my interest in the subject and served as the starting point for this thesis. In consultation with my thesis supervisor, Dr.

R.G. Ironside, we agreed that I should research the topic of agricultural land expansion.[1] We also agreed that I should conduct my research in the agricultural region of Improvement District #23 (I.D. 23)[2] in northwestern Alberta. There were four reasons for this choice.

First, we knew that agricultural land expansion ~~was~~ continuing in I.D. 23. Second, Professor Ironside knew that I.D. 23 was home to a large Mennonite farming community, as well as farmers of other backgrounds. He suggested that the presence of more than one group of farmers provided the basis for a comparative study of two groups of farmers (Mennonite and non-Mennonite) in relation to agricultural land expansion. Third, it was felt that such a study would be a worthy candidate for a research grant from a fund that had been established by Alberta Culture and Multiculturalism and the Boreal Institute for Northern Research at the University of Alberta. The fund was established to support scholarly research to commemorate the 1988 bicentennials of Fort Chipewyan and Fort Vermilion. Fourth, a study of agricultural land expansion in I.D. 23 would give me the opportunity to explore a part of the Peace River region I knew little about.

Later in the summer of 1987, Professor Ironside and I travelled to I.D. 23. We learned that agricultural land expansion continued in I.D. 23. What we learned also led to an initial research assumption: that Mennonite farmers were responsible for more than their fair share of the agricultural land expansion in I.D. 23. This initial assumption was based on interviews with provincial government employees working in an agriculture-related capacity in I.D. 23.

This thesis, therefore, is the account of my efforts to investigate this initial assumption. The following chapter provides a description of the study area. It also defines agricultural land expansion, explains the process which made this expansion possible, and describes the expansion that took place in the study area between 1984 and 1988. Chapter Three consists of literature reviews which introduce the conceptual framework, and hypotheses which were developed to investigate the initial assumption. Chapter Four describes the methods used to collect the primary and secondary data for the research, as well as the methods of analysis employed.

Chapters Five and Six present the results of the research. Chapter Five presents the results of the investigation into hypothesized differences between Mennonite and non-Mennonite farmers. Chapter Six presents the results of the investigation into two groups of farmers whose presence was not foreseen at the outset: those farmers who had acquired land for farming between 1984 and 1988, and those who had not. Chapter Seven presents conclusions and, since agricultural land expansion remains a public policy issue in I.D. 23, recommendations for public policy.

It is believed that this thesis contributes to the research literature on the northern agricultural frontier of Western Canada. Previous research (Robinson, 1954, Vanderhill, 1971, 1982) has examined large portions of this frontier, whereas this study has examined one region within the frontier. Furthermore, this thesis has adopted a behavioural perspective by investigating the relationship between the individual farmers of I.D. 23 and the agricultural land expansion process.

Notes

1. Agricultural land expansion refers to the process through which farmers acquire new Public land from the Alberta government for farming. When the land is acquired, it is usually covered by bush and forest. Farmers clear this land for cultivation, thereby expanding the agricultural land base in their area.
2. Improvement District 23 is a rural municipality in northwest Alberta with a land mass of over 10 million hectares. The agricultural region of I.D. 23 covers just over two hundred thousand hectares, or approximately two percent of this total land mass. For clarification, the I.D. 23 that is referred to throughout this thesis is the agricultural region, not the entire municipality.

CHAPTER TWO

BACKGROUND

2.1 Introduction

The purpose of this chapter is twofold. The first section of the chapter summarizes the settlement history of I.D. 23 and describes the existing agricultural region. The remaining sections deal with agricultural land expansion in this region. Expansion is defined and the process of agricultural land disposition is explained. The final section describes the agricultural land expansion that occurred in I.D. 23 between 1984 and 1988.

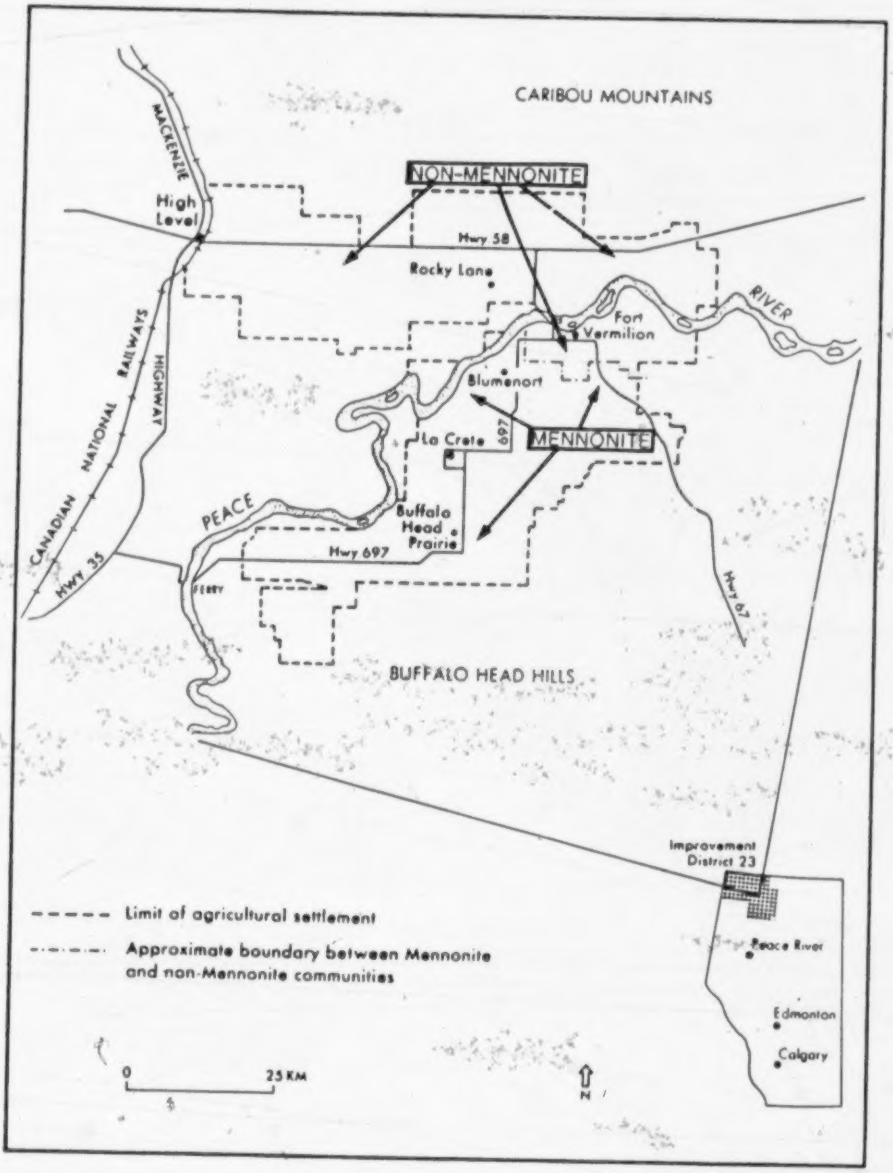
This chapter provides relevant background information. Since much of this thesis deals with the expansion of agriculture on to new Public[1] land, it is necessary to know how this land is acquired. Understanding the land acquisition process introduces the discussion of agricultural land expansion.

2.2 Study Area

Fort Vermilion (Figure 2.1) is the oldest community in I.D. 23. Settlement by whites began with the first of a series of Hudson's Bay Company fur trading posts on the Peace River, which was established near present-day Fort Vermilion in 1788. Fur trading posts were followed by Anglican and Roman Catholic missions in the eighteenth century. Gardens planted by the fur traders and the missionaries marked the beginning of agriculture in the region. The success of these farms encouraged further settlement on the fertile soils along the banks of the river. By 1907, a farm at Fort Vermilion had been converted to a Dominion

FIGURE 2.1

Agricultural Region of Improvement District 23


CARIBOU MOUNTAINS
NON-MENNONITE
MACKENZIE
High Level
Hwy 58
Rocky Lane
RIVER
Fort Vermilion
CANADIAN NATIONAL RAILWAYS
HIGHWAY
Blumenort
La Crete
697
MENNONITE
PEACE
Buffalo Head Prairie
Hwy 697
Hwy 35
FERRY
Hwy 67
BUFFALO HEAD HILLS
Improvement District 23
Peace River
Edmonton
Calgary
Limit of agricultural settlement
Approximate boundary between Mennonite and non-Mennonite communities
0
25 KM
N

Source: Map - 1987 Alberta Highway Map, Alberta Transportation and Utilties.

government experimental station to conduct further research on the region's agricultural potential.

Ukrainian settlers arrived in the region between 1910 and 1920. They settled on relatively open land[2] with good soils around what is now known as Rocky Lane, on the north side of the Peace River. Mennonite settlement in the region began in the late 1930s. Mennonite farmers first settled at Carcajou, upstream on the Peace River from Fort Vermilion, but frequent flooding prompted them to settle land with good soils south of Fort Vermilion, at Blumenort and Buffalo Head Prairie.

The land east of High Level, north and south of Highway 58, has been settled since the end of the Second World War. Agricultural settlement followed improved roads and the completion of a rail link to High Level in 1964. In the 1970s, oil and gas discoveries at Rainbow Lake and Zama, west and northwest of High Level, spurred new growth in the region. Many workers drawn to jobs in the oil and gas industry came from farm backgrounds. In many cases, these workers saw the opportunity to acquire land in I.D. 23 and turned to farming in time.

In 1986, the population of I.D. 23 was 6,942. The population density of the municipality was 11 persons per square kilometre. Within I.D. 23, the Hamlets of Fort Vermilion and La Crete are the largest settlements, with populations in 1986 of 825 and 690 respectively. The Town of High Level and the New Town of Rainbow Lake are separate urban municipalities with 1986 populations of 3,004 and 715 respectively.[3] The three municipalities combined give the region a total population of 10,661.

Transportation routes and the physiography of the region influenced the settlement pattern. Fort Vermilion was established when the Peace River was the main transportation route through the region. High Level is located at the junction of the two major highways in the region and on the Great Slave Lake Railway. Although early settlers took up land along the river, settlement pushed north and south away from the river. However, this north/south settlement thrust was eventually barred by the Caribou Mountains in the north and the Buffalo Head Hills to the south. These upland features forced more recent settlement along two east-west axes: Highway 58 in the north and Secondary Highway 690 in the south.

The agricultural lands of I.D. 23 are an extension of the Peace River region, characterized by a mixture of parkland vegetation and boreal forest. Although fertile dark-brown soils are found along the river and in small pockets elsewhere, less fertile grey-wooded soils predominate.

A small proportion of the farmland in Alberta is located in I.D. 23. There are two thousand and forty-five square kilometres of farmland in I.D. 23, or approximately one per cent of the provincial total. The 635 farms[4] in I.D. 23 also represent one per cent of the provincial total. Although these figures may suggest that this agricultural region is small, it is large in absolute terms, extending up to ninety kilometres in both a north-south and an east-west direction.

An examination of farm characteristics shows some similarities between farms in I.D. 23 and those elsewhere in Alberta. Farm sizes and average amounts of cultivated land on farms are similar (Table 2.1). However, less land is used for pasture in I.D. 23, which suggests less livestock production and a different agricultural emphasis in the region. In fact, a majority of farms in the

Table 2.1
Agricultural characteristics of Improvement District No. 23 compared to Alberta and the Peace River region

Farm characteristic	Alberta	Peace	I.D. 23
Total Area			
Number of farms	49,540	7,602	635
Hectares	20,655,340	2,849,613	204,615
Mean	416.9	374.8	322.2
Improved Area			
Number of farms	48,392	7,565	635
Hectares	12,906,037	1,906,432	141,620
Mean	266.6	252.0	222.4
Under Crops			
Number of farms	44,592	7,146	609
Hectares	9,162,523	1,371,749	103,390
Mean	205.4	191.9	169.7
Improved Pasture			
Number of farms	19,908	2,196	150
Hectares	1,376,814	150,981	4.201
Mean	69.1	68.7	28.0
Unimproved Pasture			
Number of farms	29,713	3,136	162
Hectares	6,498,111	524,785	18,430
Mean	218.61	167.3	113.7
Woodland			
Number of farms	5,712	1,635	162
Hectares	288,873	111,409	15,835
Mean	50.5	68.1	67.6

Source: 1986 Census of Agriculture for Alberta: I.D., M.D., and County Date by Region, Edmonton: Statistics Branch, Alberta Agriculture, 1987.

region are devoted to wheat or small grains production (Table 2.2), more so than in the rest of Alberta.

Farmers in I.D. 23 are younger than farmers in the rest of Alberta. Less than ten percent (8.7%) of Alberta farmers are thirty years of age or less. In I.D. 23 almost twice as many (16%) are thirty years of age or less. Conversely, while close to half of Alberta farmers are fifty years of age or older (47%), a little more than a quarter (29%) of the farmers in I.D. 23 are fifty years of age or older.

2.3 Farm Expansion and Agricultural Land Expansion

In I.D. 23, farm expansion occurs when a farmer adds land to his farm, thereby increasing the size of the farm. Agricultural land expansion occurs when a farmer acquires uncleared Public land from the Alberta government which the farmer then converts to farmland. By acquiring and clearing new land, the farmer adds to the size of the agricultural land base. Agricultural land expansion, therefore, creates regional growth. Regional growth is of interest to the geographer.

2.4 The Land Disposition Process

In I.D. 23, farmers can acquire new land only from the Alberta government. The Public Lands Division of the Department of Forestry, Lands and Wildlife is responsible for the disposition of Public land for agriculture. A Public Lands office in High Level is responsible for the disposition process in I.D. 23. Public Lands releases new land to farmers under a range of disposition types. Although there

Table 2.2
Types of farms in Improvement District 23 compared to Alberta and the Peace River region.

Type of Farm	Alberta	Peace	I.D. 23
Total farms	44,630	6,547	566
Dairy farms	1,828 (4%)	67 (1%)	12 (2.1%)
Cattle farms	17,110 (38.3%)	1,129 (17.2%)	14 (2.4%)
Hog farms	1,635 (3.6%)	118 (1.8%)	11 (1.9%)
Poultry farms	533 (1.1%)	57 (.8%)	4 (.7%)
Wheat farms	8,504 (19%)	1,239 (18.9%)	143 (25.2%)
Small grains (excluding wheat)	15,403 (34.5%)	3,373 (51.5%)	349 (61.6%)
Field crops (other than small grains)	1,187 (2.6%)	48 (.7%)	8 (1.4%)
Fruits and vegetables	119 (.2%)	7 (.09%)	0
Mixed farms	3,480 (7.7%)	404 (6.1%)	15 (2.6%)
Miscellaneous	1,944 (4.3%)	236 (3.6%)	5 (.8%)

Note: Percentages represent the proportion of a farm type in relation to the total number of farms in each of the three geographic areas.
Source: 1986 Census of Agriculture for Alberta: I.D., M.D.,, and County Data by Region, Statistics Branch, Alberta Agriculture, Edmonton, 1987.

are several agriculture-related disposition types, only those affecting new land are of interest in this study. Two types of disposition apply to land intended for cultivation: the Farm Development Lease (FDL) and the Farm Development Sale (FDS). Two types apply to land appropriate for raising livestock: the Grazing Lease (GRL) and the Grazing Permit (GRP).

Under a Farm Development Lease agreement, a farmer receives a given amount of new land. The farmer must make yearly payments and have one quarter of the land received under cultivation by the end of the five-year term of the lease. Ownership of the land remains with the province.

The farmer who meets the conditions of the Farm Development Lease usually has the option of entering into a Farm Development Sale agreement to purchase the land. A Farm Development Sale agreement entitles the farmer to acquire title to the land originally acquired under the Lease, upon completion of the Sale agreement. The status of the disposition changes from Lease to Sale but the actual land involved remains the same. However, in rare cases, a farmer can acquire new land under a Farm Development Sale agreement. The Grazing dispositions are lease agreements with no option to purchase the land. A Lease lasts five years; a Permit for one year. However, farmers occasionally acquire Grazing Leases or Permits on new land not suitable for cultivation. Although it is possible for farmers to acquire new land under any one of these four disposition types, in reality, virtually all new land acquired in I.D. 23 is acquired under Farm Development Leases.

Agriculture Development Committees also play a role in the disposition process. Community representatives from I.D. 23 sit on the Committee,[5] which may recommend, to Public Lands, that certain lands be made available for farming. When dispositions are considered, the Committee may also recommend awarding the land to a particular farmer. In recent years the Committee and Public Lands have preferred that farmers receive new land under Farm Development Leases, thereby obliging the farmers to make a committment toward a viable farm while ownership of the land remains with the province. This policy also helps to ensure that virtually all new land is acquired under Farm Development Leases.

The above discussion explains what farmers can obtain. How farmers obtain land must also be explained. The following discussion is restricted to the years of the study period (1984 to 1988) because disposition policies change.[6]

Land is disposed of by one of three methods: Regular Posting, Auction/Tender and Special Posting. If land is suitable for cultivation and a farmer expresses an interest in the land, Public Lands will make it available under a Regular Posting. Public Lands staff may take an active role in deciding to make land available under a Regular Posting. In either case, the Public Lands office in High Level provides information on the amount and cost of the relevant land. Bids for the land are reviewed by the Agriculture Development Committee and a recommendation is made to Public Lands, which makes the final decision. Farmers whose bids are unsuccessful may appeal.

The Regular Posting system is gradually being replaced by the Auction/Tender system. Under a Regular Posting, Public Lands may decide to make land available. Under the Auction/Tender system, Public Lands reacts only to demands from farmers for land designated for agricultural use. Public Lands staff will "post", or advertise, the available land and then dispose of the land either by auction (through public bids), or by tender (through private bids). In either case, the land goes to the highest bidder. There is no appeal.

The Regular Posting and Auction/Tender systems generally affect small parcels of land. In the early 1980s, the Special Posting system[7] was introduced which affected larger tracts of land. Under a Special Posting, as much as a township of land was set aside and divided into units of land considered suitable for the creation of a farm unit. This meant services (e.g. roads, power) could be planned in a coordinated manner.

Special Postings were usually oriented toward beginning farmers, with each unit considered to be a manageable amount of land on which to begin a farm. Public Lands and the Agriculture Development Committee determined the qualifications that farmers needed to participate in a Special Posting. Farmers declared eligible to participate in the Special Posting attended a public meeting to draw for the land. At the meetings, names of farmers were drawn randomly and each farmer was allowed to select a unit of land until all land was disposed of.

The creation of the Special Posting system coincided with a strong demand for land in I.D. 23 in the late 1970s and early 1980s. The demand was spurred by a strong agricultural economy in Western Canada and I.D. 23. Within the Mennonite community, demand also increased because many Mennonites had returned from Bolivia, where attempts to establish a new colony had been largely unsuccessful (Van Dyke, 1972). The Special Posting system was an effective way of meeting the demand. The Special Postings held in I.D. 23 are shown in Figure 2.2.

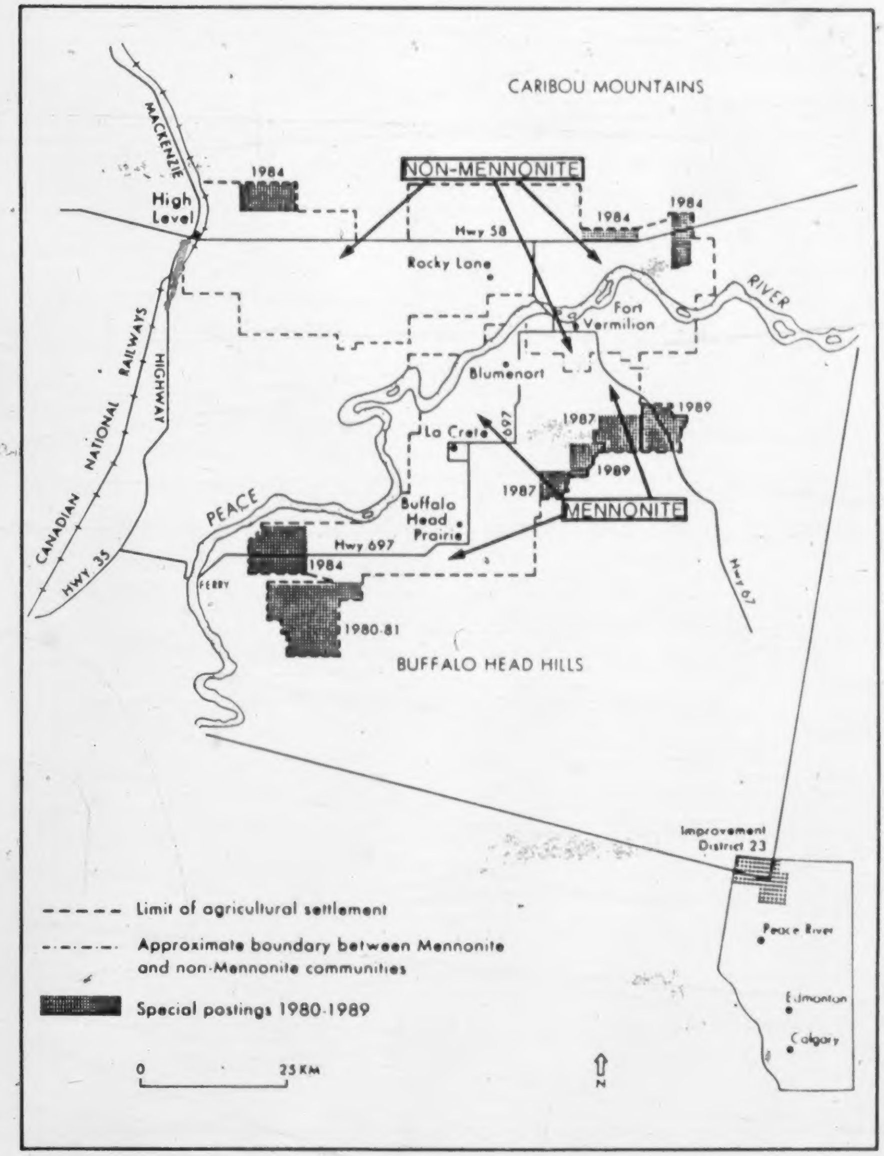
2.5 Agricultural Land Expansion in I.D. 23 : 1984-1988[8]

A five-year period (1984 to 1988) to study agricultural land expansion in I.D. 23 was chosen for two reasons. First, if there were trends in land disposition patterns, it was suspected that these trends would be apparent over a five-year period. Second, a request for five years of disposition data was considered a reasonable one to make to Public Lands staff.

The discussion above on the four disposition types indicated that it was possible for farmers to obtain new land under any one of the four disposition types. In practice, virtually all new land acquired between 1984 and 1988 was acquired under Farm Development Leases. A review of data obtained from the Crown Land Data Services Section of the General Services Division of Alberta Energy showed one

FIGURE 2.2

Special Postings in Improvement District 23, 1980-1989


CARIBOU MOUNTAINS
NON-MENNONITE
MACKENZIE
1984
High Level
Hwy 58
1984
1984
Rocky Lane
RIVER
Fort Vermilion
Blumenort
1989
1987
La Crete
697
1989
1987
MENNONITE
CANADIAN NATIONAL RAILWAYS
HIGHWAY
PEACE
Buffalo Head Prairie
Hwy 697
HWY 35
1984
FERRY
Hwy 67
1980-81
BUFFALO HEAD HILLS
Improvement District 23
Peace River
Edmonton
Calgary
Limit of agricultural settlement
Approximate boundary between Mennonite and non-Mennonite communities
Special postings 1980-1989
0
25 KM
N

Sources: Data - High Level Office, Public Lands Division, Alberta Forestry, Lands & Wildlife.
Map - 1987 Alberta Highway Map, Alberta Transportation and Utilities.

Grazing Lease and one Farm Development Sale awarded on new land. In each case, the amount of land affected was no more than one quarter section (64.6 hectares). The discussion in the remainder of this chapter is, therefore, limited to land acquired under Farm Development Leases.

Farm Development Leases are recorded in the data as either "Disposed" or "Cancelled". A Disposed Lease indicates successful completion of the terms of the Lease agreement. A Cancelled Lease means a farmer failed to meet the terms and has lost the land. (Land affected by Cancelled dispositions is re-claimed by Public Lands and may be awarded again at a later date to another farmer). However, Public Lands releases new land to farmers under Farm Development Leases, so the decision to designate dispositions as either Disposed or Cancelled is not made until later. Therefore, Cancelled Leases are no different from Disposed Leases in determining the overall amount of new land released by Public Lands for farming. Nonetheless, Disposed and Cancelled Leases can still be examined separately as an indication of the beginning farmer failure rate. It is also important to note, in determining the total amount of new land released to farmers, that re-claimed land that is released again can be counted twice. The review of the data turned up twelve of these cases, which were dealt with appropriately.

The disposition data obtained from Public Lands provided, for each disposition, the name of the farmer involved with the disposition, the date of the disposition and, most importantly, the amount and location of the land involved. Table 2.3 shows the amount of new land affected by Farm Development Lease dispositions in I.D. 23 from 1984 to 1988. Table 2.4 shows that Disposed Leases outnumbered Cancelled Leases. Despite a difficult agricultural economy in I.D. 23 between 1984 and 1988, most farmers were successful in meeting the terms of their Farm Development Leases.

Table 2.3
Public Land dispositions under Farm Development Leases in Improvement District 23: 1984-1988

Year	Number of Farm Development Leases	Amount of Public Land disposed (in hectares)
1984	50	8,867.7
1985	66	9,898.6
1986	57	6,856.6
1987	49	7,559.0
1988	20	2,970.6
	—	———
Totals	242	36,152.5

Source: Crown Land Data Services, General Services Division, Alberta Energy

Three hundred and sixty square kilometres of new land were added to the agricultural land base of I.D. 23 in this five-year period. This amount represented a fifteen percent increase in the amount of agricultural land in I.D. 23 by 1988.[9] The location of these additions to the agricultural land base are shown for each year of the study period in Figures 2.3 through 2.7. Furthermore, the absolute size of the region increased since much of this land was located on the margins of the region (Figures 2.2 and 2.8).

The existence of the Mennonite and non-Mennonite farming communities in I.D. 23 raises the following question: did these two groups of farmers acquire new land at equivalent rates? Table 2.4 shows that Mennonite farmers acquired an amount of new land that was greater than the amount acquired by non-Mennonite farmers by more than 5,083 hectares.[10] This imbalance is also evident from the data on the Special Postings held in I.D. 23. Table 2.5 shows that five of the seven Special Postings (at

Table 2.4
Public Land dispositions under Farm Development leases in Improvment District 23 to Mennonite and non-Mennonite farmers: 1984-1988

Year	Disposed leases	Amount of Public Land (in hectares)	Cancelled leases	Amount of Public Land (in hectares)
		Mennonite		
1984	13	1,638.9	7	1,026.8
1985	35	5,338.0	9	1,386.2
1986	34	3,213.2	5	708.1
1987	29	4,483.8	7	1,327.8
1988	11	1,495.1	-	-
Totals	122	16,619.3	28	4,448.1
		Non-Mennonite		
1984	19	3,648.4	11	2,553.5
1985	17	2,465.0	5	709.3
1986	13	1,858.0	5	1,077.1
1987	9	1,169.4	4	577.9
1988	7	1,096.3	2	379.2
Totals	65	10,237.3	27	5,297.1

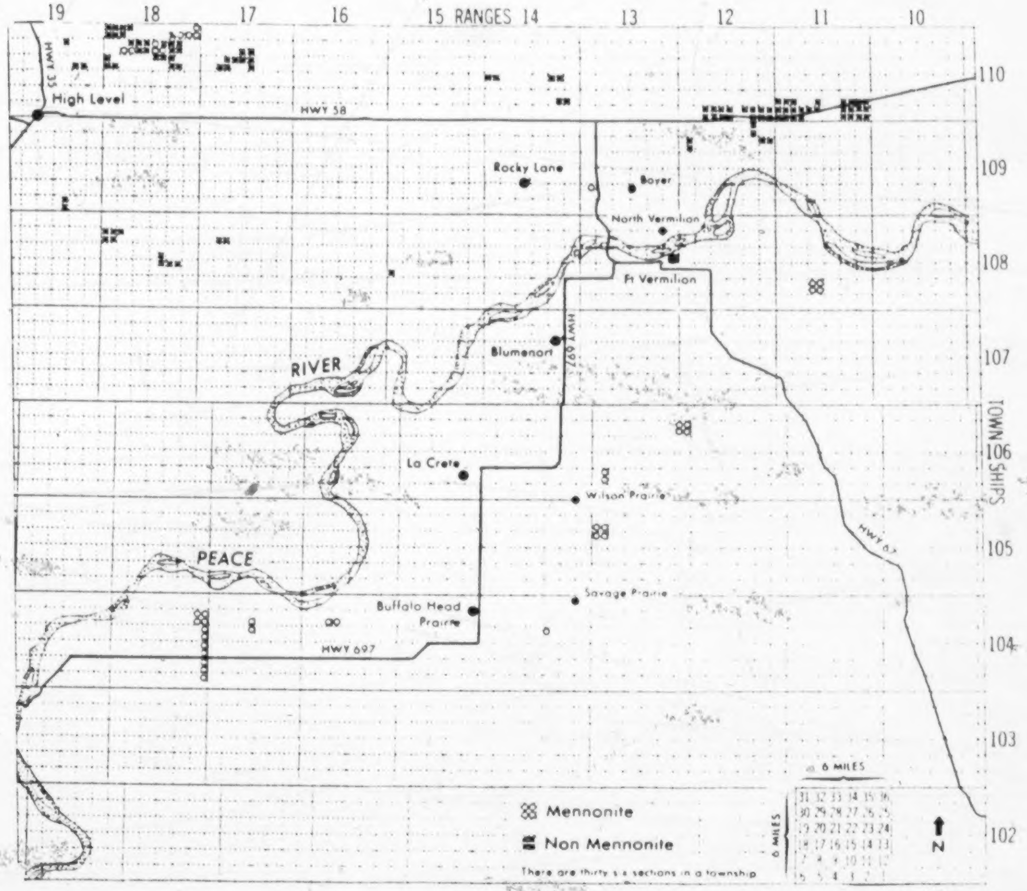
Mennonites	Non-Mennonites
Total leases: 150	Total leases: 92
Total hectares:20,618.4	Total hectares: 15,534.5
Mean disposition: 137.4 hectares	Mean disposition: 168.8 hectares

Sources: Crown Land Date Services, General Services Division, Alberta Energy, and, Mr. Peter Chomiak, Rocky Lane, Alberta, and Mr. Jake L. Peters, La Crete, Alberta.

Blue Hills in 1980 and 1981, at Tompkins Landing in 1984, and in East La Crete in 1987 and 1989) made new land available to Mennonite farmers. These postings involved a larger number of available units and larger amounts of land than the two Special Postings which were held to make land available to non-Mennonite farmers (at

FIGURE 2.3

Farm Development Lease Dispositions in Improvement District 23, 1984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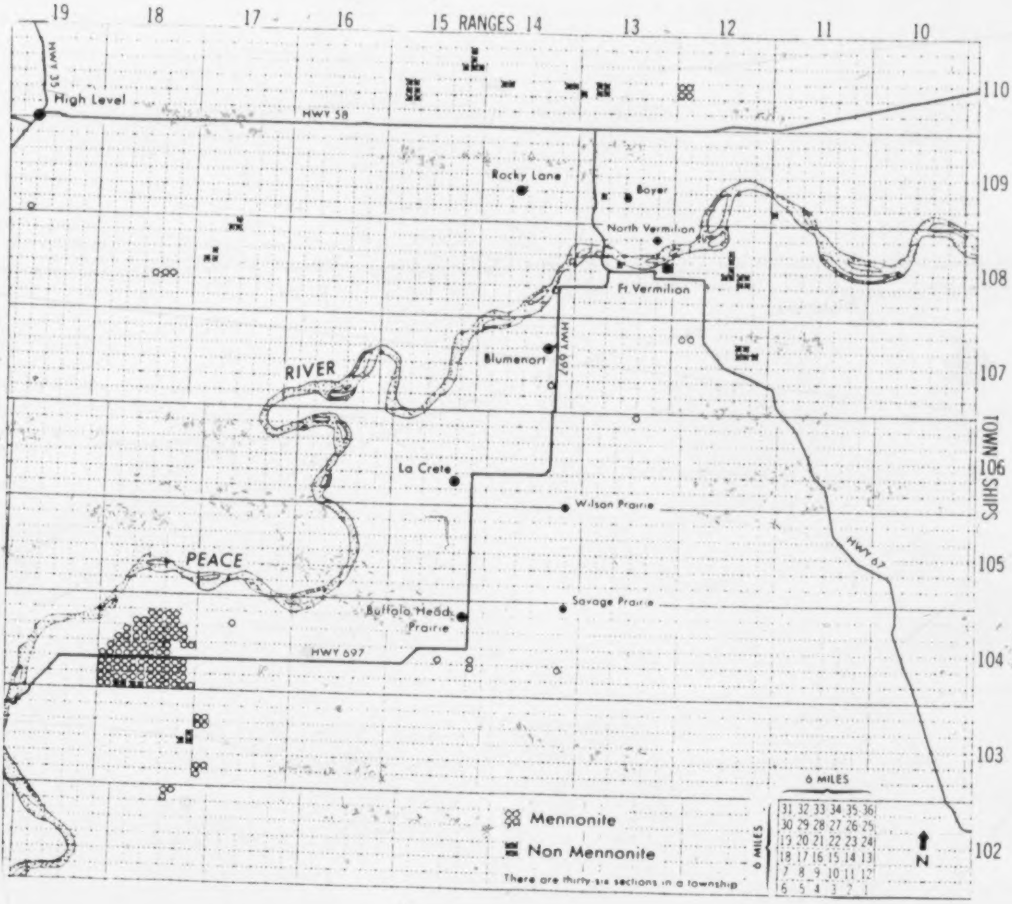
TOWN SHIPS
HWY 35
High Level
HWY 58
Rocky Lane
Boyer
North Vermilion
Ft Vermilion
Blumenort
HWY 697
RIVER
La Crete
Wilson Prairie
PEACE
Buffalo Head Prairie
Savage Prairie
HWY 697
HWY 67
Mennonite
Non Mennonite
There are thirty six sections in a township
6 MILES
6 MILES
N

Sources: Data - High Level Office, Public Lands Division, Alberta Forestry, Lands & Wildlife.
Map - Strategic Planning, Planning & Development Division, Alberta Transportation.

FIGURE 2.4

Farm Development Lease Dispositions in Improvement District 23, 1985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HWY 697
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Wilson Prairie
PEACE
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Buffalo Head Prairie
Savage Prairie
HWY 697
Mennonite
Non Mennonite
There are thirty six sections in a township
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6 MILES
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30 29 28 27 26 25
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18 17 16 15 14 13
7 8 9 10 11 12
6 5 4 3 2 1
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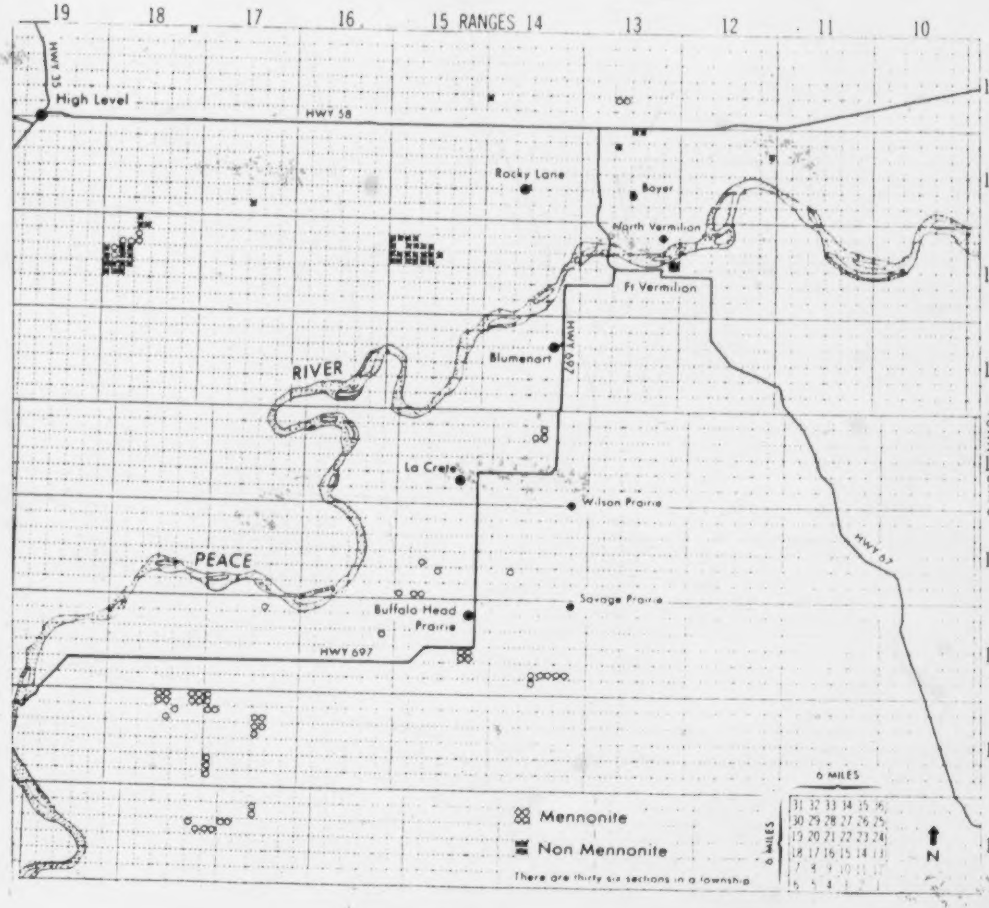
Sources: Data - Crown Land Data Services, General Services Division, Alberta Energy.
Map - Strategic Planning, Planning & Development Division, Alberta Transportation.

FIGURE 2.5

Farm Development Lease Dispositions in Improvement District 23, 1986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Blumenort
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La Crete
Wilson Prairie
PEACE
Buffalo Head Prairie
Savage Prairie
HWY 697
HWY 67
Mennonite
Non Mennonite
There are thirty six sections in a township
6 MILES
6 MILES
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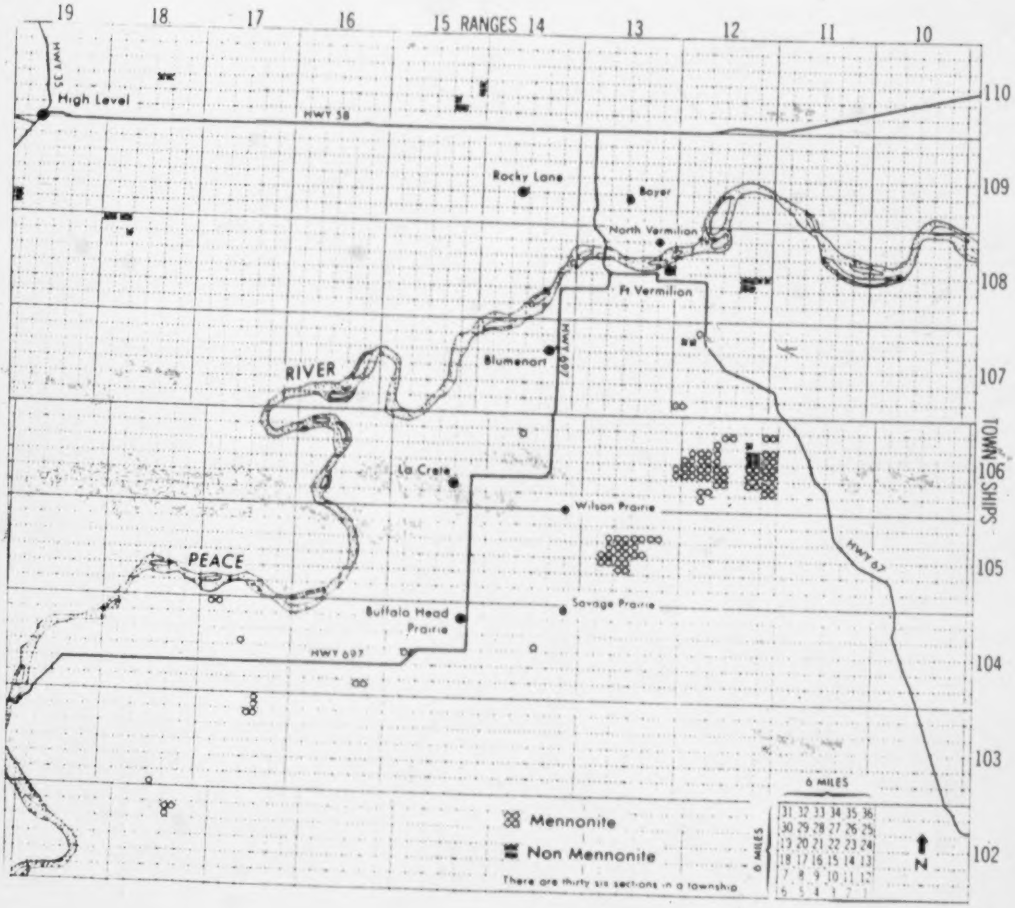
Sources: Data - Crown Land Data Services, General Services Division, Alberta Energy.
Map - Strategic Planning, Planning & Development Division, Alberta Transportation.

FIGURE 2.6

Farm Development Lease Dispositions in Improvement District 23, 1987



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HWY 67
Buffalo Head Prairie
Savage Prairie
HWY 697
Mennonite
Non Mennonite
There are thirty six sections in a township
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6 MILES
31 32 33 34 35 36
30 29 28 27 26 25
19 20 21 22 23 24
18 17 16 15 14 13
7 8 9 10 11 12
6 5 4 3 2 1
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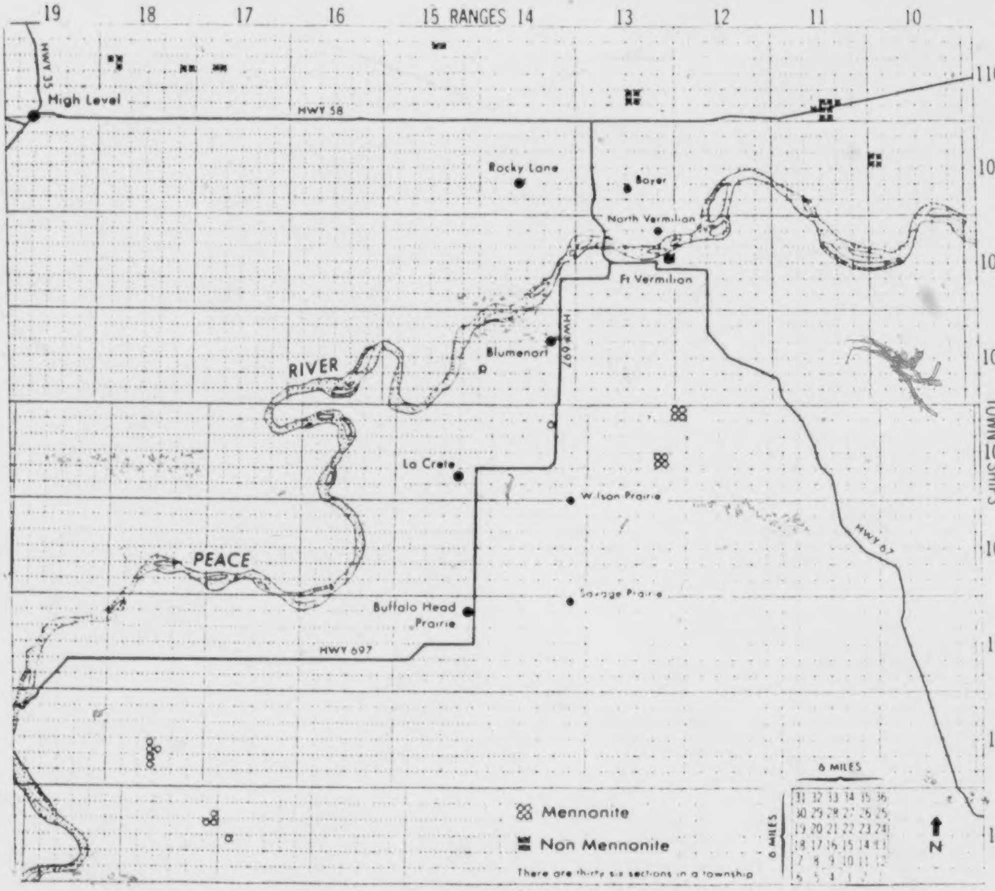
Sources: Data - Crown Land Data Services, General Services Division, Alberta Energy.
Map - Strategic Planning, Planning & Development Division, Alberta Transportation.

FIGURE 2.7

Farm Development Lease Dispositions in Improvement District 23, 1988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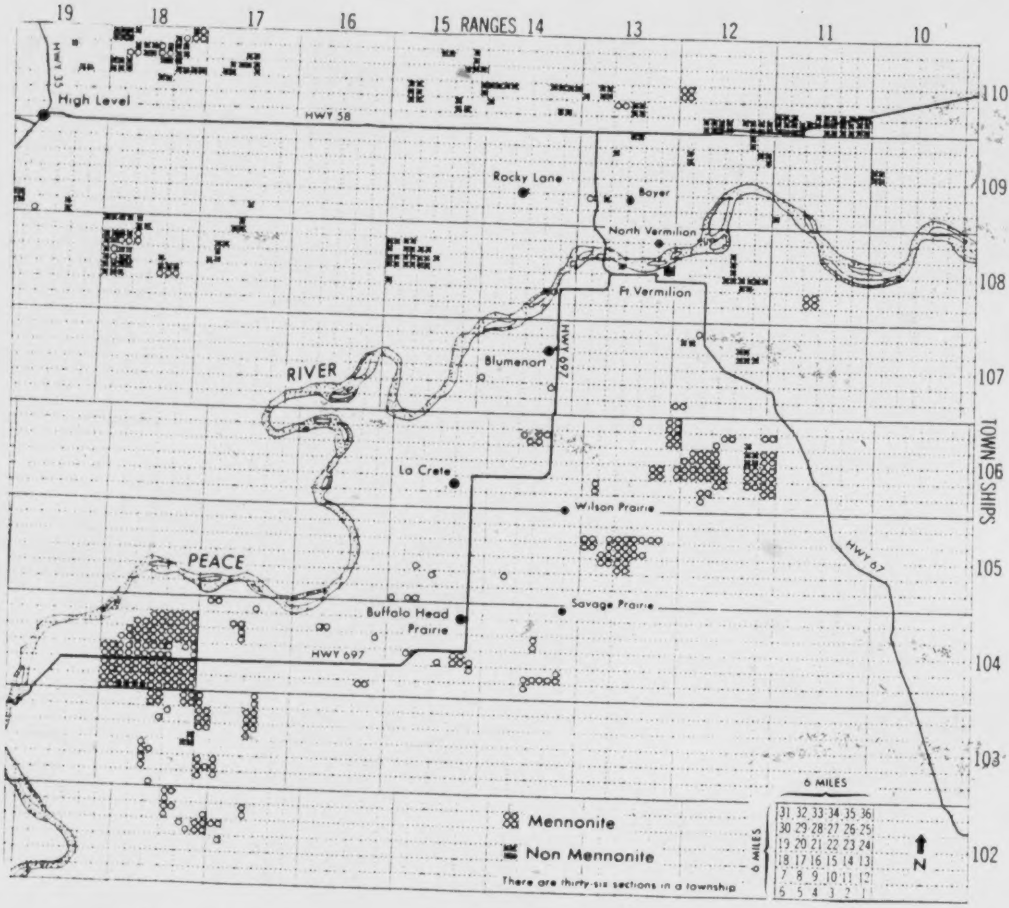
Wilson Prairie
HWY 67
PEACE
Buffalo Head Prairie
Savage Prairie
HWY 697
Mennonite
Non Mennonite
There are thirty six sections in a township
6 MILES
6 MILES
N

Sources: Data - Crown Land Data Services, General Services Division, Alberta Energy.
Map - Strategic Planning, Planning & Development Division, Alberta Transportation.

FIGURE 2.8

Farm Development Lease Dispositions in Improvement District 23, 1984-1988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TOWN SHIPS
▨ Mennonite
■ Non Mennonite
There are thirty-six sections in a township
6 MILES
6 MILES
31 32 33 34 35 36
30 29 28 27 26 25
19 20 21 22 23 24
18 17 16 15 14 13
7 8 9 10 11 12
6 5 4 3 2 1
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Sources: Data - Crown Land Data Services, General Services Division, Alberta Energy.
Map - Strategic Planning, Planning & Development Division, Alberta Transportation.

Table 2.5
Special Postings in Improvement District 23: 1980-1988

Year\location	Number of farmers who applied to participate in Special Posting	Number of farmers who participated in Special Posting	Number of units of farmland awarded in Special Posting	Range in size of units of farmland awarded in Special Posting (in hectares)
1980				
Blue Hills	179	71	19	93-147
1981				
Blue Hills	189	133	30	91-162
1984				
High Level	31	n.a.	8	236-352
Fort Vermilion	19	15	7	319-391
Tompkins Landing	142	132	30	162-258
1987				
East La Crete	91	62	23	161-232
1989				
East La Crete	32	20	15	190-254

Note: Locations for Special Postings are shown on Map 2.2. For clarification, Special Postings at Blue Hills and Tompkins Landings occurred southwest of La Crete.
Source: High Level office, Public Lands Division, Alberta Forestry, Lands & Wildlife.

High Level and Fort Vermilion in 1984).

Table 2.6 represents one attempt to answer the question. Enumeration area data obtained for I.D. 23 showed that the population of the Mennonite farmers was 312, and the population of the non-Mennonite farmers was 278.[11] Dividing the total amounts of land acquired by the two groups by the population figures produces the results in Table 2.6. Each Mennonite farmer acquired 66.08 hectares of new land

Table 2.6
Public land dispositions and average disposition acquired by Mennonite and non-Mennonite farmers: 1984-1988

Total hectares	Group population	Mean disposition (in hectares)	Equivalent quarter-sections of land
		Mennonite	
20,618.4	312	66.08	1.02
		Non-Mennonite	
15,534.5	278	55.80	0.86

Sources: Crown Land Data Services, General Services Division, Alberta Energy, and, Statistics Canada, Enumeration Area data: I.D. 23, 1986.

between 1984 and 1988. Each non-Mennonite farmer acquired 55.8 hectares during the same period. This suggests that Mennonite farmers acquired, on average, larger amounts of new land. However, these results are based on the assumption that every farmer in I.D. 23 acquired new land between 1984 and 1988. Rather than depend on this questionable assumption to draw conclusions about the behaviour of the two groups in acquiring new land, reference was made to the land acquisition data obtained from the Alberta government. This data is a complete record of every Farm Development Lease in I.D. 23 between 1984 and 1988.

The totals shown at the bottom of Table 2.4 show that 150 Mennonite farmers acquired new land under Farm Development Leases between 1984 and 1988. Ninety-two non-Mennonite farmers acquired new land under Farm Development Leases during the same period. Dividing the total amounts of land acquired by Mennonite and non-Mennonite farmers by these figures produces the results shown in Table 2.4.

Mennonite farmers who acquired new land acquired an average of 137.4 hectares, while non-Mennonite farmers who acquired new land acquired an average of 168.8 hectares.

This suggests an opposite conclusion: non-Mennonite farmers acquired, on average, larger amounts of new land. While this is true, it is also true that non-Mennonite farmers were not as active in acquiring new land. The 150 Mennonite farmers who acquired new land represented 48% of the 312 Mennonite farmers. The 92 non-Mennonite farmers who acquired new land represented only 33% of the 278 non-Mennonite farmers.

A two-fold conclusion is suggested by this analysis of the land acquisition data. First, Mennonite farmers were more active in acquiring new land between 1984 and 1988. Second, while they were not as active, non-Mennonite farmers acquired larger amounts of new land, on average, than Mennonite farmers. Therefore, the land acquisition behaviours of the two groups differed. The following chapters attempt to explain this difference.

Notes

1. The terms "Crown" and "Public" land are often used to refer to the same land. In I.D. 23, "Crown" is used in reference to land owned by the federal government (e.g. Indian Reserves), while "Public" refers to land owned by the province.
2. There is evidence to suggest that these open areas did not occur naturally. Lewis and Ferguson (1988) suggest that these areas were the result of native burning practises.
3. Population figures are taken from the 1986 Census of Canada.
4. The statistical data used to compare the agricultural characteristics of I.D. 23 to those of Alberta and the Peace River region was drawn from: 1986 Census of Agriculture for Alberta, I.D., M.D., and County Data by Region, Statistics Branch; Alberta Agriculture, Edmonton: Alberta Agriculture, 1987.
5. These community representatives are appointed to the Committee by the Minister of Agriculture.
6. For example, Homestead Civilian Sales were replaced in 1984 by Farm Development Sales.
7. Further discussion of the Special Posting system is presented in Chapter Seven.
8. Much of the discussion in this section of the Chapter is based on land disposition data obtained from the provincial government. It was the lack of this type of data that was recognized by Ironside et. al. (1974b, pp. 270-272) as an impediment to research on frontiers. Fortunately, the past fifteen years have seen tremendous advances in computerization and geographic-oriented data storage and retrieval systems. It was from such a system that this land disposition data was obtained. Without it, it would have been far more difficult to determine how many Public land dispositions were made and where these dispositions occurred.

9. The three hundred and sixty-nine square kilometres of new land added to the I.D. 23 agricultural land base did not represent three hundred and sixty-nine square kilometres of fully cultivated land. Since farmers are responsible for clearing land, and since the rate of clearing varies from farmer to farmer, it is very difficult to know exactly how much of this total amount had been actually cleared and cultivated by the end of 1988.

10. The land acquisition data obtained from the Alberta government was sent to two farmers in I.D. 23: Mr. Pete Chomiak of Rocky Lane, and Mr. Jake L. Peters of La Crete. These two gentlemen were selected because of their extensive knowledge of the farmers in the region, and because of their work with the Agriculture Development Committee in I.D. 23. Mr. Chomiak and Mr. Peters were asked to indicate, on each individual disposition, whether it had gone to a Mennonite or a non-Mennonite farmer. By adding the amounts of land for the two groups, it was possible to determine the amounts of new land acquired by the Mennonite and non-Mennonite farmers.

11. These figures were calculated in the following manner. Figures 2.1 and 2.2 show that the Mennonite and non-Mennonite farming communities are geographically seperate. The boundaries for the enumeration areas used in the 1986 Census coincided with the boundaries of the two communities. A certain number of enumeration areas covered the Mennonite farming community, and vice-versa. The number of farmers in each enumeration area were counted to determine the population figures. There was, however, one exception. One enumeration area overlapped both communities. In this case, reference was made to the land ownership map produced by the Improvement District. This map provides the names of landowners for each quarter-section of land. The enumeration area in question was marked on this map. The names of landowners within this area were

classified as Mennonite or non-Mennonite. The proportions determined out of the total number of landowners within the enumeration area were applied to the number of farmers in the enumeration area data to determine the number of farmers in each group. These figures were added to the figures drawn from the other enumeration areas to determine the total populations.

CHAPTER THREE

CONCEPTUAL FRAMEWORK AND HYPOTHESES

3.1 Introduction

Previous research on Canada's northern agricultural frontier (Robinson, 1954; Biays, 1968; Ehlers, 1970; Ironside et. al., 1974), or what Vanderhill (1971, p. 123) referred to as "the ragged edge", has often been descriptive in nature. Vanderhill's most recent work (1982) was based on field observations and a survey of the agricultural frontier in the four provinces of Western Canada. This study seeks to go beyond description to explain agricultural land expansion in that portion of "the ragged edge" found in I.D. 23.

Studies on northern Alberta's agricultural frontier, and on the demand for agricultural land in I.D. 23, have been carried out over the years by the Alberta Department of Agriculture (Miller, 1968; Hanus, 1979, 1980; Alberta Agriculture, 1988) or by government agencies (Alberta Land Use Forum, 1974; Northern Alberta Development Council, 1983, 1988; Environment Council of Alberta, 1985). These studies provided successive governments with information and recommendations on which to base policy decisions.

What is notable from these studies is the lack of agreement on whether or not to continue opening new agricultural lands in Northern Alberta. Some studies opposed the idea (Alberta Land Use Forum, 1974; Environment Council of Alberta, 1985), while other studies advocated opening new land (Horner, 1981; Northern Alberta Development Council, 1983).

An additional dimension is lacking from these studies. Ilbery (1986) suggests that "the fundamental unit of study in agricultural geography is the farm and the farmer" (p.27.) Few[1] of these studies examined the role of the individual farmer in the agricultural land expansion process, nor was any attempt made to investigate the influence of the personalities of individual farmers on the demand for new land. This thesis, therefore, builds on the existing research by investigating the relationship between individual farmers and the demand for new land. While this may be one of the first times such a study has been carried out among the farmers of Canada's northern agricultural frontier, it is certainly not a novel approach: "if we want to know how or why a farmer acts in a certain way ... we have to enquire why men act, and especially why men act as they do when they live in the sort of social environment and general circumstance in which farmers live" (Ashby, 1926, p.5)

The explanatory potential of this approach was recognized by Brown (1971), who examined the impact on farmers of the completion of the Great Slave Lake Railway through northern Alberta in the 1960s. Brown measured cropping patterns and other indicators of the economic behaviour of individual farmers to compare her empirical findings against a model based on Von Thunen agricultural location theory. She found that farmers had not changed their economic behaviour to take advantage of opportunities offered by the new railway. Brown concluded that entrenched cultural traditions were one factor that affected the economic behaviour of the farmers she studied, and suggested that: "an approach to land use analysis which takes cognizance of farmers' attitudes may be more appropriate than an approach which assumes rational, economic man" (Brown, 1971, p. 105).[2]

A further argument can be made in favour of an approach which examines the subjective world of individual farmers in the study area. The Mennonite farm population of I.D. 23 is larger than the non-Mennonite farm population. It could be argued that more numerous acquisitions of Public land by Mennonite farmers is a function of the larger population. This argument, however, implies that demand for land is primarily a function of the demographic structure of the region. This argument ignores the role of the individual farmer in relation to agricultural land expansion. It has been shown above that the acquisition of land through Farm Development Leases, by individual farmers, is the cause of agricultural land expansion. There is, therefore, merit in an approach which examines an element of the behaviour of individual farmers in relation to agricultural land expansion.

3.2 Literature Reviews

3.2.1 Attitudes

The decision to study the attitudes of farmers in I.D. 23 was a deliberate one which will be explained below. Before doing so, it is necessary to discuss key elements of a conceptual framework developed by Gasson (1973).

Gasson's primary interest was to try to understand differences between farmers (i.e. the size of their farms and the scale of their farming operations). To achieve this goal, her focus was on trying "to discover what farmers *really want* from their occupation." (p. 521). To determine what farmers "really wanted", she examined their values, which were defined as "ends in themselves, pursued for their own sake. They serve as standards influencing the selection from among available modes, means and ends of action" (p. 524-525). Gasson further argued that individuals subscribe, not to individual values, but to "value orientations" (p. 525), in which similar values are associated with each other. Individuals then subscribe to these value orientations according to preference. It was suggested that different behaviours would be related to different value orientation preferences. The question is: why were attitudes, not values, examined in this study?

First, it was felt that Gasson erred in examining both values *and* goals. Values and goals have different meanings, according to the social psychology literature. Gasson noted that some of the statements used in her investigation (p. 527) were more goal-oriented than value-oriented: "Although values are defined as self-sufficient ends, it is evident that some on this list are closer to *goals* and might serve as means to attain more desired ends" (p. 527). By introducing goals into her conceptual framework, it is believed that the effectiveness of the framework was weakened because the results beg this question: to what extent were the farmers investigated value-oriented or goal-oriented in relation to their farming behaviour? Gasson did not suggest how the relative influences of these two variables were to be separated.

This discussion raises a further question: does the decision to study attitudes, rather than goals and values, suggest that this study is based on a stronger conceptual foundation? It is believed that the validity of the study is enhanced by this decision for two reasons. First, by studying only one variable, the problem of determining the relative influences of two or more variables is avoided. Second, it could be argued that those statements in Gasson's framework which reflected only values, or goals, should have been used in this study. In using both types of statements, perhaps the "separation" dilemma discussed above is introduced anyway. However, the study was designed to examine attitudes. By doing so, it can be argued that the "separation" problem is not at issue, since it is the *attitudes* of farmers toward value or goal statements that are of interest, not the extent to which their goal or value orientations differ.

Attitudes were also chosen for a practical reason. Whereas there appeared to be few value measurement systems to choose from, there was an extensive literature on attitude measurement offering a range of attitude measurement methodologies. These methodologies were reasonably simple to understand and use in a study of this kind. Rokeach (1968) suggests that individuals hold more attitudes than values, thus making attitudes more accessible and more measurable. Although values may be more enduring within individuals than attitudes, attitudes are still considered to be sufficiently enduring to be measured.

A definition of attitudes is required. According to Myers (1983), an attitude is: "A predisposition towards some object; includes one's beliefs, feelings, and behaviour tendencies concerning the object" (p. 35). An "object" can be a thing, place, or person in either the social or physical environment (Gold, 1980).

There are two approaches to analysing and understanding attitudes: the functional and structural approaches (Pennington, 1986). The former approach explains what attitudes do for individuals, while the latter approach explains what attitudes are.

The functional approach identifies four functions of an attitude: the adaptive, knowledge, self-expressive and ego-defensive functions. An adaptive attitude directs the individual to attain that which will give satisfaction and avoid that which will be unpleasant. A knowledge attitude directs the individual to order and classify information received through cognition, thereby making aspects of the external world more understandable. Through a self-expressive attitude, individuals gain a sense of self-worth. An ego-defensive attitude allows individuals to cope with their own uncharacteristic or unpleasant behaviour to maintain self-worth. Together, these four functions of an attitude "help a person to mediate between the inner demands of the self and the outside world" (Pennington, 1986, p. 62).

The structural approach argues that attitudes consist of cognitive, affective and conative (or behavioural) components. The structural approach holds that an individual becomes aware of an object through cognition. The individual evaluates the object and develops affect or an inclination toward it. Based on this affect, the individual is then pre-disposed to behave in certain ways in relation to the object, hence the conative component.

The conative, or behavioural component is considered to be the problematic characteristic of an attitude. From a survey of attitude literature, Allport (1935) concluded that researchers considered the conative component to be "the essential element" (p. 8) of an attitude because of its contribution to behaviour. Attitude and social pyschology researchers have tried to examine and measure the relationship between an attitude, and the behaviour that results from the individual holding the attitude. Establishing a causal relationship between attitude and behaviour would mean that it is possible to change behaviour by changing attitudes. It has, however, been difficult to establish this relationship (Gold, 1980, p. 25).

Attitudes are held to have two characteristics which affect their relationship with behaviour: intensity and direction. An attitude may be strong or weak, positive or negative. An individual with a weak negative attitude toward an object will behave differently in relation to the object than an individual with a strong positive attitude toward the same object. These two characteristics have provided a framework for methodologists to work from in constructing attitude measurement schemes.

The purpose of this study was to investigate relationships between the attitudes of individual farmers and their land acquisition behaviours. The emphasis in the study, therefore, is on the structural rather than the functional approach, because the structural approach deals with the attitude-behaviour relationship. It must be recognized, however, that some limitations are involved. First, attitudes are usually measured for comparison against subsequent behaviour. In this study, the behaviour (i.e. the decision to acquire new land) has already occurred, which means that attitudes are to be measured after the fact. Furthermore, while an attitude may be stable over time, the attitude can also change. There is, therefore, no way or knowing whether the attitudes measured in this study are the same as those which farmers held when they actually acquired new land.

Second, the measurement scales created for this study measure only the affective component. Since the scales do not measure the conative component, inferences about the influence of attitudes on farmers' decisions to acquire land are made with caution. Third, attitudes are complex and subtle human traits. An investigation using an attitude measurement scale will achieve limited success at best: "In forcing attitudes into a scale form violence is necessarily done to the unique structure of man's mind. Attitude scales should be regarded only as the roughest approximation of the way in which attitudes actually exist in the mental life of individuals." (Allport, 1935, p. 12).

3.2.2 Behavioural Studies in Agricultural Geography.

Previous research (Gasson, 1973; Ilbery, 1983) has examined the goals and values of farmers in relation to their behaviour. Gasson investigated whether the "value orientations" of farmers varied with farm size, and found that "it was the smaller farmers who tended to value intrinsic aspects of farming more highly while operators of medium and large farms placed greater emphasis on instrumental and social aspects". (p. 532)

Although Ilbery's (1983) findings were similar to those in Gasson's study, he also found "a more complex picture than envisaged" (p. 340). Ilbery concluded that the results of his study prevented generalizations about the explanatory power of goals and values in relation to the behaviour of farmers. Nonetheless, Ilbery did suggest that further investigations based on Gasson's framework were warranted.

A modified version of Gasson's framework has been used in this study. For reasons explained above, the goals and values of farmers in I.D. 23 were not examined. Furthermore, it was not possible to replicate her framework, for three reasons. First, Gasson studied farmers in England, while this study examines farmers in Northern Alberta. There are differences in the cultures, the crops grown, and the agri-business systems connected with the farmers in these two regions. Second, Gasson used farm size as the independent variable in her investigation. In this study the ethno-religious background of farmers serves as the independent variable. Third, Gasson's study included a number of farm types, while this study is restricted to grain and mixed farms.

Gasson argued that farmers subscribe to four types of value orientation:

> An instrumental orientation implies that farming is viewed as a means of obtaining income and security with pleasant working conditions. Farmers with a predominantly social orientation are farming for the sake of interpersonal relationships in work. Expressive values suggest that farming is a means of self-expression or personal fulfillment, while an intrinsic orientation means that farming is valued as an activity in its own right (p. 527).

Gasson argued that the extent to which a farmer subscribed to one or more of these orientations then influenced the behaviour of the farmer. In this study, an attempt will be made to show that the different attitudinal orientations of two groups of farmers are related to their land acquisition behaviours.

3.2.3 Mennonites

The history of the Mennonite people began in Zurich, Switzerland in 1525. The name Mennonite was derived from Menno Simons, who led early Mennonite congregations in the Netherlands and northern Germany until his death in 1559. The Mennonite faith was one of a number of Protestant-based faiths which grew out of the widespread break with Catholicism across Europe. The early Mennonites developed beliefs which they continue to adhere to: "Mennonites base their belief on the Bible, especially the New Testament. Their statement of beliefs is based on the Sermon of the Mount (Matthew 5-7). Mennonites believe it forbids going to war, swearing oaths, or holding offices that require the use of force, and are opposed to infant baptism" (Neufeld, 1989,

p. 93).

As the faith grew, many Mennonites lived in European cities. However, religious persecution eventually forced many Mennonites from the cities into rural areas where they turned to farming for a livelihood (Friesen, 1975). These Mennonites developed a separate way of life which allowed them to distance themselves from the influence of the outside world and to practise their religion in relative isolation. In the centuries that have followed, Mennonites have often opted for mass migrations rather than accept externally imposed change: "their isolationist attitude and their refusal to do military service ... has been instrumental in the numerous migrations" (p. 16).

For the Mennonite settlers who arrived in the eastern United States in the 17th century, farming had become "an almost universal and sacred occupation" (Heatwole, 1979, p. 3). The first Mennonite settlers to arrive in Manitoba in the late 18th century sought: "an isolated, self-sufficient agricultural way of life where relationships with 'the world' could be most carefully controlled" (Busteed, 1980, p. 249). The first Mennonite settlers to move into the Peace River region were descendants of Dutch Mennonites who had moved to northern Germany and Prussia in the 1600s, and then to the Ukraine in the following century. Many of these same Mennonites then migrated to Canada and the United States, beginning in 1874 (Neufeld, 1989).

A handful of Mennonites had investigated the settlement potential of the Fort Vermilion region in the early 1930s. In the spring of 1934 the first significant wave of Mennonite settlement occurred when about two hundred Mennonite settlers gathered at Peace River to transport their possessions downstream on the Peace River toward Fort Vermilion (Peace River Record-

Gazette, 1934). They had left established settlements in Saskatchewan rather than accept the attempts by the government of that province to impose stricter educational controls on them. Epp (1982) said their arrival in the Peace River region meant "the desired isolation from worldly influence and from the rigid enforcement of education laws had been found" (p.358). These early settlers were the first of many, as Mennonites from other parts of the Prairie provinces also moved to the Fort Vermilion region in the decades that followed. Many chose to move on again, to such places as Mexico and Bolivia (Van Dyke, 1972), although many of these migrants eventually decided to return to Canada.[3]

It does not appear that farming and an agrarian way of life was ever formally sanctioned as an article of religious faith by Mennonite religious leaders and theologians. Farming became a means to an end, providing an environment in which Mennonite religious beliefs and customs could be adhered to. As a consequence, Mennonites developed a reputation for being good, often exceptional farmers. Bender (1956) offers this explanation for their reputation:

> Frugality, simplicity, avoidance of dissipation of mind and body through indulgence in drinking and immorality, belief in the Christian virtue of work, large and well-integrated families, freedom from tradition because of their break with the state-culture system, determination to make good agriculturally and thus countervail the condemnation of society, all of these no doubt played a role (p. 305).

The Mennonites of present-day I.D. 23 are more integrated in the society of the late 20th century than were the first Mennonite settlers to the region, and the bond between the Mennonites and farming has weakened somewhat. Not all young Mennonites who want to farm have been able to do so. Some have had to leave the community to find work in such centres as Grande Prairie and

Edmonton. The leaders within the Mennonite community in I.D. 23 know that the supply of good, arable land is dwindling and that economic diversification of the local economy is needed to provide future jobs in the region for their young people (Scott and Fenrich Consultants Incorporated, 1987). Nonetheless, strong ties persist between many of the Mennonites and farming. There is a common saying in the community which maintains that a young Mennonite person should "stay on the land and earn an honest living" (Wiebe, pers. comm., August, 27, 1988). This suggests that Mennonite demand for land has remained strong because the Mennonite community still considers farming to be an appropriate way of life for the farmer and his or her family.

3.3 Conceptual Framework and Hypotheses

Chapter Two offered the conclusion that the land acquisition behaviours of Mennonite and non-Mennonite farmers differed, based on the analysis of Public Lands land acquisition data. The analysis showed that Mennonite farmers had been more active in acquiring new land, while non-Mennonite farmers, although less active, had acquired larger average amounts of new land than Mennonite farmers. In this section of the thesis, the way these different behaviours are to be explained is outlined.

3.3.1 Non-attitudinal variables

Non-attitudinal variables which were examined included those related to the farm itself (i.e. farm size, farm type, acquisitions of Public and other land types, financing of land acquisitions, reasons for acquiring or for not acquiring Public land), or variables of a personal nature (i.e. age, income, off-farm work, family size, involvement of children in farming, and reasons for farming). The primary focus of the research was on hypothesized attitudinal differences between Mennnonite and non-Mennonite farmers. However, non-attitudinal variables were also examined to determine whether differences existed between the two groups across other dimensions. It was suspected that if attitudinal differences emerged, there might be relationships which could be suggested between these differences and non-attitudinal differences. The following chapter on Methods discusses reasons for the selection of the various non-attitudinal variables.

3.3.2 Attitudes toward farming

It was expected that both groups would have positive attitudes toward farming, otherwise they would not be farming. However, it was felt that Mennonite attitudes toward farming would be more positive because Mennonite history and culture has enshrined farming as an appropriate way of life. Mennonite farmers were believed to have more reasons to have more positive attitudes toward farming. This argument led to the first hypothesis:

> Mennonite farmers' attitudes toward farming are more positive than those of non-Mennonite farmers.

Gasson (1973) developed four orientation categories: Instrumental, Social, Expressive and Intrinsic. The existence of the Mennonites in this study suggested that differences could exist between the two groups according to a fifth orientation. The Cultural category was added to test that hypothesis that:

> The Cultural attitudes of Mennonite farmers toward farming are more positive than the Cultural attitudes of non-Mennonite farmers toward farming.

The farmer with an Instrumental orientation toward farming sees farming as "a means of obtaining income and security with pleasant working conditions " (Gasson, 1973, p. 527). This definition describes farming as a job or career, rather than a way of life. For Mennonite farmers, it has been argued, farming is a way of life. For non-Mennonite farmers, who lack the same ethno-cultural background, farming is less likely to be a way of life and more of a job or career. Therefore, the third hypothesis tested was:

> The Instrumental attitudes of non-Mennonite farmers toward farming are more positive than the Instrumental attitudes of Mennonite farmers.

Gasson (1973) defined the Expressive orientation as "a means of self-expression or personal fulfillment" (p. 527). Non-Mennonite farmers do not operate within an identifiable community like that of the Mennonites. Non-Mennonite farmers may be more individualistic in their outlook toward farming and, it is suspected, find farming to be more of "a means of self-expression or personal fulfillment" than Mennonite farmers. Farming, for the non-Mennonite farmer, could be a way of establishing an individual identity rather than establishing an identity within a community. The fourth hypothsis tested was:

> The Expressive attitudes of non-Mennonite farmers toward farming are more positive than the Expressive attitudes of Mennonite farmers toward farming.

The Mennonite farmer operates within a community which values the lifestyle offered by farming. Farming is deemed an appropriate occupation into which Mennonite young people enter.[4] Within the Mennonite community, then, "farming is valued as an activity in its own right" (Gasson, 1973, p. 527). The fifth hypothesis tested was:

> The Instrinsic attitudes of Mennonite farmers toward farming are more positive than the Instrinsic attitudes of non-Mennonite farmers toward farming.

Gasson (1973) defined a Social orientation as "farming for the sake of interpersonal relationships in work" (p. 527). The preference within the Mennonite farming community is for the family-oriented way of life offered by farming. The cohesiveness of the identifiable Mennonite community affords members of the community many opportunities for "interpersonal relationships". From this reasoning, it was possible to suggest the sixth hypothesis:

> The Social attitudes of Mennonite farmers toward farming are more positive than the Social attitudes of non-Mennonite farmers toward farming.

These hypotheses are a conceptual attempt to suggest a relationship between the attitudinal orientations of these two groups of farmers and their different land acquisition behaviours. It has been suggested that Mennonite attitudes are more positive within the Cultural, Instrinic and Social orientations, and that non-Mennonite attitudes are more positive within the Instrumental and Expressive orientations.

These hypotheses suggest that Mennonite farmers are "socially" oriented, while non-Mennonite farmers are "individually" oriented. The behaviour of the Mennonite farmer, in acquiring new land, may be constrained by the norms of the Mennonite farming community. While the Mennonite farmer is encouraged to acquire new land to begin or expand a farm, the same farmer may also be expected to moderate his or her demand for new land, in the interests of sharing the available land. The social environment surrounding the Mennonite farmer may encourage new land acquisitions, but in relatively small amounts.

The non-Mennonite farmer operates in a different social environment. There may be less social pressure to acquire new land. Morever, when the non-Mennonite farmer decides to acquire new land, there may be fewer community-based constraints affecting the amount of land the farmer chooses to acquire. The non-Mennonite farmer is freer to act, according to individual preference, in acquiring new land.

3.3.3 Attitudes toward Public Land disposition

Agricultural land expansion is a familiar issue in the I.D. 23 farming community, since it has been the subject of much formal and informal public debate. It is assumed that farmers in I.D. 23 generally support continued agricultural land expansion, and that they support the continued disposition of arable Public land for further agricultural land expansion. The availability of Public land for farming in I.D. 23 has helped the region to develop and grow. It seems inconceivable that farmers in I.D. 23 would be in outright opposition to continued Public land dispositions.

The argument has been developed which suggests that farming is of greater importance to the Mennonite farming community because of the preference for the way of life which farming offers and because farming is deemed a suitable occupation for the Mennonites. This suggests the seventh hypothesis to be tested:

> Mennonite farmers have more positive attitudes toward continued Public land disposition than non-Mennonite farmers.

This is not to suggest that non-Mennonite farmers' attitudes toward Public land disposition are negative. However, it was felt that more non-Mennonite farmers might have ambivalent attitudes toward Public land disposition, which might contribute to a difference between the two groups.

Notes

1. One exception may be the 1983 Northern Alberta Development Council report: The Development of New Agricultural Land in Northwestern Alberta: Final Report. This study attempted to predict the demand for new farm land in four sub-regions of the Peace River region, including I.D. 23. While the study did involve a survey of individual farmers, it did not investigate any element of their personalities in relation to their demand for new land.
2. Maxwell (1964, p. 115) reached a similar conclusion.
3. Van Dyke (1974) provides a fascinating account of the decision by many Mennonites near La Crete to move to Bolivia in the early 1970's. Van Dyke eventually travelled to Bolivia to observe how the Mennonites fared in their new colony. However, his study was completed before many of the Mennonites who had moved to Bolivia decided to return to La Crete and I.D. 23 in the late 1970s and early 1980s. These returning Mennonites and their families increased the demand for land in the region. They were a factor in the creation of the Special Postings that were held in the region (see Chapters 2 and Table 2.2). In fact, the area immediately east of the Peace River and south of Secondary Highway 697, where new land was made available for many of these returning farmers, came to be known as "Little Bolivia". In 1988, residents of the area decided to call this part of the region "Blue Hills".
4. Few Mennonites in I.D. 23 work in the oil industry because it operates on a seven-day-a-week schedule. Oil-related jobs would deny Mennonites the opportunity to visit their families on weekends and to observe the Sabbath.

CHAPTER FOUR

METHODS

4.1 Introduction

This chapter explains the methods used to obtain relevant background information and the data needed to deal with the research hypotheses. It explains how the research questionnaire was created, and discusses the statistical tests and levels of explanation used in the analysis and interpretation of the data.

The discussion in this chapter is presented in three sections. Field-related work is discussed in chronological order. The preparation of the questionnaire is dealt with in the second section, and the methods of analysis and levels of explanation related to the questionnaire data are described in the final section.

4.2 Field-related work

4.2.1 Pre-field work

Work carried out at the pre-field work stage involved the identification of secondary data relevant to the research. Enumeration area data from the 1986 Census of Canada was needed to calculate the Mennonite and non-Mennonite farm populations, and, given these figures, to calculate the amounts of new land acquired by each group. The data was obtained in September, 1989 from the Statistics Canada office in Edmonton.

The publication entitled 1986 Census of Agriculture for Alberta: I.D., M.D.

and Country Data by Region provided data that was required to compare the agricultural characteristics of I.D. 23 with those of the Peace River region and Alberta. This publication also provided secondary data on a range of selected agriculture-related variables. This data was compared with the primary data generated by the questionnaire to determine the representativeness of the sample used in the study.

4.2.2 Field Work

Field work was carried out in the study area between June and August of 1988. Four objectives had to be met during June. First, increased knowledge of the study area was needed. Second, a list of farmers in the study area had to be found for use as a sampling frame. Third, a pilot test of the questionnaire had to be conducted. Fourth, a source of agricultural land disposition data had to be identified.

Background information was obtained from several formal interviews and many more informal interviews with farmers, municipal politicians and administrators, and agricultural professionals in I.D. 23. Obtaining a list of farmers turned out to be a more difficult task. Inquiries were made of more than twenty potential sources.[1] In many cases (e.g. the Canadian Wheat Board), the list of farmers was confidential and access to the list was not possible. In other cases (e.g. Alberta Hail and Crop Insurance Corporation), the list was found to be inadequate.[2] In other cases, no list was available (e.g. District Agriculturist - Fort Vermilion, Mackenzie Regional Planning Commission).

Arrangements were made to obtain a membership list for I.D. 23 from the

Alberta Wheat Pool, the farmer-owned grain handling and farm services co-operative. This list was, under the circumstances, the best list available.[3] A second, shorter list of cattle, hog and sheep producers was also obtained from the Alberta Agriculture office in Fort Vermilion. Both lists were combined to produce a master list for the sampling frame.

The pilot test of the questionnaire was conducted by selecting the names of thirty-two farmers, at random, from a land ownership map of the study area. Each farmer was sent a letter which explained the purpose of the research. In twenty-one of the thirty-two cases, the questionnaire was delivered, in person, to the farmer, and a second visit was made later to pick up the completed questionnaire. Many farmers were very helpful in pointing out ambiguities and other problems with the questionnaire. Two farmers were not willing to complete a questionnaire. For the remaining nine farmers, no contact was made despite visits to their farms. The questionnaire was then sent in the mail with a request that it be completed and returned.

The Public Lands Division of Alberta Forestry, Lands & Wildlife was identified as a source for agricultural land disposition data. A request for the necessary disposition data was made to the Division's regional office in Peace River which, once received, provided the necessary information.

In July of 1988, a preliminary analysis of the questionnaire data from the pilot survey was carried out. Wording changes were made to several attitude statements to remove abiguities, and other sections of the questionnaire were revised.[4] The list of farmers was also finalized at this time. Combining the two lists and eliminating duplicate names and the names of farmers used in the pilot test created a final list of 468 farmers. Determining the size of the sample to be used in the full survey was the next task.

It was clear, however, that the list of 468 names did not represent the population of farmers in I.D. 23. A population figure was difficult to determine at the time since the population figures that were available (Alberta Agriculture, 1987, Northern Alberta Development Council, 1988) conflicted with each other. Furthermore, enumeration area data had not yet been obtained from Statistics Canada, so it was difficult to determine the proper sample size.

A sample of 30 is sometimes suggested as a minimum. However, a larger sample was preferred in order to increase the probability that the sample would be representative of the population. Initially, a sample size of seventy-five was considered, which was tied to plans to interview these farmers and establish personal contact with them. The alternative considered was a mail-out survey to one hundred or more farmers. This would have increased the number of respondents, but at the expense of any personal contact with them.

A compromise was adopted. The number of farmers to be surveyed was increased to 117, or one quarter of the 468 farmers in the sampling frame. It was believed that one hundred and seventeen farmers would more likely provide a representative sample than seventy-five. Personal contact was to be maintained by delivering the questionnaires to farmers, in person, with a request that the questionnaire be completed and returned. This total was also considered to be a manageable number of farm visits to make in the time available for the survey.

The names of 117 farmers were sampled in the following fashion. From the 32 pages of names, one page and then one name were selected as a random starting point. Every fourth name was then drawn for the sample. Letters explaining the research, which also promised a farm visit to deliver the questionnaire, were sent to the 117 farmers.

In August of 1988, the main objective was to deliver these questionnaires. Of the 117 questionnaires, 92 were delivered after one, or in some cases, two visits to the farm. In 11 cases, despite two farm visits, the farmer was unavailable and the questionnaire was then mailed with a request that it be completed and returned. One farmer refused to complete the questionnaire. Seven farmers were no longer farming, four had retired and two were deceased. This meant that 104 farmers had the opportunity to respond to the questionnaire.

Further background information was obtained in August. Interviews were conducted with representatives of the Public Lands office in High Level to gain a better understanding of the Public Lands disposition process. An interview was also conducted with representatives of the Agriculture Development Corporation (ADC) in Fort Vermilion, to determine the role played by the ADC in the disposition process.[5]

4.2.3 Post-field work

By November of 1988, it was clear that the number of questionnaires received from the August survey (46) was inadequate. To generate additional questionnaires, the names of those farmers surveyed in August and those farmers known to be deceased or retired were dropped from the list, which left a total of 337 names. All 337 farmers were sent a covering letter, a questionnaire and a return mail envelope in early December. Since circumstances at the time would not permit an additional trip to the study area, these surveys were mailed to the 337 farmers.[6]

In March of 1989, a second request was made for Public land disposition data to the Crown Land Data Services branch of the General Services Division of Alberta Energy. There were two reasons for this additional request. First, it was now possible to obtain disposition data for the full five-year study period. The data obtained previously had been incomplete for 1988. Second, the examination of the data obtained from the Public Lands regional office in Peace River had raised new questions. These questions could only be answered by both narrowing and expanding the scope of the disposition data.[7] Once these additional data were obtained, it was possible to generate a complete record of the Farm Development Leases which had been released to farmers in I.D. 23 between 1984 and 1988.

The final task was to send copies of this Farm Development Lease data to two farmers in I.D. 23.[8] Both men were asked to indicate, on each individual disposition, whether the farmer was Mennonite or non-Mennonite. Of the 242 dispositions examined by the two men, there was disagreement on only four dispositions.[9] When these data was returned, it was then possible to determine the amounts of new land acquired for agricultural land expansion by Mennonite and non-Mennonite farmers (Table 2.5), and to map the new land acquired by both groups (Figures 2.3 to 2.8).

4.2.4 Response rates

By February of 1989, it was possible to analyse the response rates for the survey. Forty-six of the 104 returnable questionnaires from the August survey were received, which represented a response rate of forty-four per cent (44.2%). A mistake was made in not recording the number of questionnaires which were returned from the December survey as non-answerable. However, the 13 non-answerable questionnaires from the August survey represented 11% of the total of 117 questionnaires. Applying this figure against the December survey suggests that 37 of the 337 questionnaires could not be answered, leaving a total of 300. In total, therefore, this analysis suggests there was a total of 404 questionnaires which farmers received and could respond to if desired. Since a total of 125 questionnaires were returned, this represents an overall response rate of almost 31 percent (30.9%).

The religious affiliation indicated in the questionnaires was used to determine whether the respondents were Mennonite or non-Mennonite. Mennonite respondents were those who had checked the "Mennonite" category for the question on religious affiliation. Those respondents indicating an affiliation with the Catholic, United or Anglican churches, or who had checked "Other Protestant", "None" or "Other", were deemed to be non-Mennonite (the one "Other" respondent had no apparent connection to the Mennonite community). The respondents who chose the category of "None" were assigned to the non-Mennonite group. Since the Mennonite community in I.D. 23 is a strong and visible community, it was felt that farmers who belonged to this community would clearly indicate this affiliation.

For four questionnaires, the question on religion was not answered. Rather than abandon these usable questionnaires, responses to other questions in these four questionnaires were examined for clues as to the identity of the respondent. Based on this examination, all four respondents were assigned to the non-

Mennonite group. This process revealed that seventy-four (74) of the one hundred and twenty-five respondents (59%) were Mennonite, while fifty-one (51) respondents (41%) were non-Mennonite.

4.3 Preparation of the Questionnaire

Work began on the questionnaire in early 1988 and continued until the first round of field work in June of 1988. Further work was carried out on the questionnaire in July of 1988 based on the results of the pilot test, in order to prepare a final questionnaire for the second round of field work in August of 1988.

The questionnaire was designed to do two things. First, it was designed to measure the attitudes of the two groups of farmers toward farming, and toward Public land disposition. Second, it was designed to measure a range of non-attitudinal variables to see whether differences existed between the two groups, and to see whether these differences could be associated with any attitudinal differences that emerged.

With respect to the non-attitudinal land-related variables, it was assumed, at the questionnaire design stage, that Mennonite farmers had acquired larger amounts of Public land than non-Mennonite farmers. Questions were designed to test whether there was support for this assumption, and also to investigate whether the behaviour of the two groups also differed for acquisitions of other types of land. If Mennonites were acquiring more Public land, it was suspected that the make-up of their farm holdings might also be different, compared to non-Mennonite farmers. Given large families within the Mennonite community, and the apparent support for young Mennonite farmers, it was felt that the financing of acquisitions might differ. Mennonites might get more help from families in acquiring land, while non-Mennonite farmers might be more reliant on commercial or Agriculture Development Corporation loans to acquire land. Given the importance of land to both groups, it was believed that the reasons *why* these two groups acquired land might also differ. It was possible that non-Mennonite farmers acquired land primarily to expand, while Mennonite farmers might acquire land for expansion *and* to set land aside for their children. Reasons why Public land was *not* acquired were investigated because it was suspected that differences might exist. If it was found that Mennonites chose not to acquire land primarily because no land was available, while non-Mennonites did not acquire land more because of the associated costs, this would suggest that Mennonite farmers were more likely to acquire Public land despite the costs.

The non-attitudinal personal attribute questions were also designed to test for differences. The age of farmers was measured to determine whether farmers in one group were significantly older than farmers in the other group. Younger Mennonite farmers at earlier stages in their farming careers, might be related to the greater Mennonite demand for Public land. Income and off-farm work variables were used to see whether Mennonite farmers, in acquiring more Public land, had to have larger incomes to do so. Questions related to farmers' children, and to the activity of their children in farming in I.D. 23, were designed in the hope that predictions could be made about continued demand. If it could be shown, for example, that more Mennonite children had farms in I.D. 23, that more Mennonite children had received help to start farming, and that more Mennonite children were going to start farms in I.D. 23 in the future, these findings might have implications for the future demand for Public land in the region. Significant differences in favour of Mennonite farmers for these questions would also support the analysis of the Mennonite farming community as one which favoured farming as an occupation for their young people more so than the non-Mennonite community.

The questions for non-attitudinal variables were of the author's own creation, based on the author's knowledge of farming in I.D. 23. Questionnaires in other studies (e.g. Northern Alberta Development Council, 1983a) were also consulted in creating these questions.

In creating the statements for the first Likert-type[10] attitude measurement scale, the sole reference was the framework developed by Gasson (1973). The statements used by Gasson are shown in Table 4.1. In converting these "goal/value" statements to attitude statements, it was not possible to preserve the exact wording of each statement. However, an attempt was made to write the attitude statements to reflect the content of Gasson's statements. It was found that an effective way to write many of these statements was to use the word "should" (Likert, 1932, p. 90). Thus, for example, Gasson's "continuing the family tradition" in the Social category became "Farming *should* be continued as a family tradition".

Four of the five statements were used from the four categories in the Gasson framework, for a total of 16 statements. The remaining four statements for the Cultural category were of the author's own creation. These were written to reflect characteristics of the Mennonite community in I.D. 23. To paraphrase Gasson: a Cultural orientation suggests that farming is viewed as a way to

Table 4.1
Goals and values in farming

Instrumental
- making maximum income
- making a satisfactory income
- safeguarding income for the future
- expanding the business
- providing congenial working conditions - hours, security, surroundings

Social
- gaining recognition, prestige as a farmer
- belonging to the farming community
- continuing the family tradition
- working with other members of the family
- maintaining good relationships with workers

Expressive
- feeling pride of ownership
- gaining self-respect for doing a worthwhile job
- exercising special abilities and aptitudes
- chance to be creative and original
- meeting a challenge, achieving an objective, personal growth

Intrinsic
- enjoyment of work tasks
- preference for a healthy, outdoor, farming life
- purposeful activity, value in hard work
- independence - freedom from supervision and to organise time
- control in a variety of situations

Source: Gasson, R. (1973) "Goals and values of farmers" Journal of Agricultural Economics 24(3): pp. 521-537.

indicate individual acceptance of the standards of a cultural community, in order to gain acceptance within that community. However, it should be noted that these statements were also written in a sufficiently general way so that farmers from both groups could respond to them.

The statements written for the attitude measurement scale on Public land disposition were also of the author's own creation. They were based on the author's knowledge of the Public land disposition issue, and on the discussion of the Public land disposition issue in the literature (Environment Council of Alberta, 1985; Hanus, F., 1979; Northern Alberta Development Council, 1983b). The orientation categories for statements related to the issue of Public land disposition were also of the author's own creation, as shown in Table 4.2.

Table 4.2
Classification of Public land disposition statements

Economic
-Public land should not be made available to farmers when the agricultural economy is depressed
-Public land should not be made available for farming because of the high cost to the provincial government of providing services to new farming areas
-Public land should be made available to farmers to provide an economic benefit to I.D. 23
-Public land should be made available for farming even though good farmland may be up for sale elsewhere in Alberta

Community
-Public land should be made available to the sons of local farmers whenever they want to start their own farms
-Public land should not be made available to beginning farmers until the cost of borrowing money to buy and clear land comes down
-Public land should be made available to beginning farmers to start their own farms because farming is a good occupation for young people
-Public land should not be made available to beginning farmers who live outside I.D. 23

Resource
-Public land should be made available to farmers, even if the land is needed for the forest industry
-Public land should not be made available for farming if the land is needed to protect wildlife populations

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Statements placed in the Economic category reflected economic considerations related to Public land disposition. Resource statements dealt with other potential resource uses for the Public land in I.D. 23. Community statements reflected concerns shared by members of the I.D. 23 farming community about the relationship between Public land disposition and their communities.

4.4 Methods of Analysis

4.4.1 Preparation of Data

A coding structure was developed to facilitate computer analysis of the questionnaire data, which was entered into a data file and stored in the University of Alberta mainframe computing system. Analysis of the data file was conducted using the SPSSx computing package.

4.4.2 Statistical tests

Non-attitudinal variables were, for the most part, measured at either the nominal or interval scales of measurement. In analysing these variables, therefore, a limited range of statistical tests was applied. These were either descriptive tests (e.g. variable counts, measures of central tendency) or inferential tests (e.g. the chi-square test of goodness-of-fit and independence). Attitudinal variables were analysed using the Student-*t* test of independent means.

The chi-square goodness-of-fit test, which compares an observed distribution against an expected distribution, was used to determine the representativeness of the sample to the population. The chi-square test of independence, used to test data from independent categories, was used in this study to compare non-attitudinal variable data for Mennonite and non-Mennonite farmers.[11]

The Student-*t* test compares means from two samples to determine whether the means are significantly different from one another and, therefore, whether they can be considered to have been drawn from separate populations. This test was used to test the mean values, for Mennonite and non-Mennonite farmers, on each of the thirty attitude statements, for the orientation categories, and for the overall scale scores. Strictly speaking, this test should be used on data measured at the interval level or higher. However, it is relatively common practise to use this more rigorous technique on this type of ordinal data.[12]

A statistically significant difference does not prove that the difference exists. For example, a test on the mean age of Mennonite farmers compared to non-Mennonite farmers, which shows a significant difference at the .05 level of significance, means that there is a 5 in 100 chance that it would be wrong to conclude that the average age of the two groups does truly differ.[13]

4.4.3 Levels of explanation

Before presenting the results for the analysis of attitudes, it is necessary to explain why the results are presented according to three levels of explanation: specific, intermediate, and general.

At the specific level of investigation, the result for each individual attitude statement is examined separately. At this level, it can be determined whether or not Mennonite and non-Mennonite attitudes differ according to individual statements. If there are differences at this level, it is then possible to search for elements which are common among those statements on which the two groups differ. If there are common elements, they can be examined to see whether they are related to the concepts involved in the orientation categories.

At the intermediate level of investigation, the attitude statements are combined according to the conceptual framework. Orientation means, rather than statement means, are examined to determine whether differences exist. Each orientation mean represents the means of all statements related to the orientation category, for all farmers in either group. These results are of particular importance since they are the results which determine whether there is support for the research hypotheses.

Finally, at the general level of investigation, all statement means for all farmers in either group are combined to produce a single score for each group. Comparison of these two scores permits general conclusions to be reached about the attitudes of both groups, notwithstanding any attitudinal differences at the first two levels.

Notes

1. Enquiries were made of the following agencies or offices regarding the availablility of a list of farmers in I.D. 23:

1) Alberta Power - High Level;

2) Improvement District 23 Administration offices - High Level and Fort Vermilion;

3) Improvement District 23 Agricultural Fieldman, Fort Vermilion;

4) Improvement Districts and Native Services Division, Alberta Municipal Affairs, Edmonton;

5) Assessment Services Division, Alberta Municipal Affairs, Edmonton;

6) District Agriculturist, Alberta Agriculture, Fort Vermilion;

7) District Agriculturist, Alberta Agriculture, Wainwright (former District Agriculturist at Fort Vermilion);

8) Statistics Branch, Alberta Agriculture, Edmonton;

9) Research Branch, Alberta Agriculture, Edmonton;

10) Farm Business Management Branch, Alberta Agriculture, Edmonton;

11) Alberta Forestry, Lands & Wildlife, Fort Vermilion;

12) Alberta Wheat Pool, High Level;

13) Canada Post, Edmonton;

14) Alberta Hail & Crop Insurance Corporation, Fort Vermilion;

15) Canadian Wheat Board, Winnipeg;

16) Agriculture Canada, Special Grains Program, Edmonton;

17) Land Titles Office, Attorney General of Alberta, Edmonton;

18) Department of Rural Economy, University of Alberta, Edmonton; and

19) Mackenzie Regional Planning Commission, Berwyn.

2. In the case of the list of farmers held by the Alberta Hail and Crop Insurance Corporation, many Mennonite farmers did not subscribe to Hail and Crop Insurance because it was against their beliefs to do so.

3. It was recognized that this list would also be incomplete. Some farmers in I.D. 23 do not belong to the Alberta Wheat Pool.

4. For example, four additional land holdings categories were added to the final questionnaire. The two categories included in the pilot questionnaire had proved inadequate.

5. The Agriculture Development Corporation (ADC) is the agency to which most beginning farmers turn to acquire financing for new land acquisitions. While the ADC serves as the "banker" for these farmers, it has no role in determining which lands they receive. That decision remains under the jurisdiction of Public Lands.

6. It could be argued that this approach compromised the overall survey methodology, since the second group of farmers was surveyed differently from the first. Different treatments may have led to different responses and, if true, would compromise the data derived from both groups. However, in defence of the survey methodology that was adopted, no changes were made to the questionnaire that the first and second groups of farmers received. Furthermore, while the method of questionnaire delivery differed, the way in which the farmers were asked to respond to the questionnaire was the same. In both cases, farmers were asked to complete and return the questionnaire on their own and at their convenience.

7. The scope was expanded by requesting additional disposition-related data for postings on new land, for example. The disposition types other than the Farm Development Lease (i.e. FDS, GRL and GRP) were checked against this list to see whether any of these dispositions had occurred on new land in I.D. 23. Virtually none had, so the scope of the disposition data request was then narrowed to include Farm Development Leases only.
8. The two farmers chosen were Mr. Pete Chomiak of Rocky Lane and Mr. Jake L. Peters of La Crete. These two farmers were selected based on their extensive knowledge of the farmers in the region, and because of their work with the local Agriculture Development Committee.
9. These disagreements were resolved according to the location of the farmer. If the farmer was located south of the Peace River, Mr. Wiebe's ruling was accepted. If the farmer was located north of the Peace River, Mr. Chomiak's ruling was accepted.
10. The attitude measurement scales used in this study are referred to as "Likert-type" because they did not precisely follow the methodology proposed by Likert (1932) for the creation of these scales. Likert proposed that the final set of attitude statements used in an attitude measurement scale be drawn from a much greater number of initial statements. Likert also suggested that these statements be created by various individuals in order to reflect ideas and notions about the attitude object other than those held by the author. In this case, the initial pool of statements was of the author's own creation, as were the final statements used in the two scales incorporated into the questionnaire. For this reason, it is more appropriate to refer to the scales as "Likert-type".

11. In using this particular test, most statistical texts issue a warning similar to the following: "No category should have an expected frequency less than 1, and not more than one category in five should have an expected frequency less than 5" (Norcliffe, 1987, p. 98). This was a frequent problem with much of the data subjected to the chi-square test of independence. In many cases, frequencies did not meet these criteria. In other cases, there were no frequency counts at all for some categories. The data was either collapsed to meet the criteria, or was presented as descriptive data only.

12. A note of explanation is required on the handling of statement means. When presenting the mean values for individual statements, the means are presented according to the wording of the statement. If the statement is worded in the positive, the mean is correspondingly high. If the statement is worded in the negative, the mean is low. However, when adding these statement means to generate mean values for the orientation categories and scale scores, it was necessary to reverse the scoring on the negatively worded statements.

13. Statistical analysis of the attitude statements in both scales was also carried out using the factor analysis technique. However, the results which this technique generated were, for the most part, inconclusive and failed to contribute to the interpretation of the questionnaire data. For this reason, these results were not included in the study.

CHAPTER FIVE

ANALYSIS AND INTERPRETATION OF RESULTS FOR MENNONITE AND NON-MENNONITE FARMERS

5.1 Introduction

This chapter presents the results of the analysis of questionnaire data for Mennonite and non-Mennonite farmers, interprets these results, and draws conclusions about the hypothesized differences between the two groups. These differences are based on assumptions drawn from the literature on Mennonites. The Mennonites, and the related Hutterite and Amish peoples, are known for their adherence to an agrarian way of life. While farming provides a living for these groups, it also allows them to protect and maintain their religious beliefs and social customs. In the case of the Mennonites in I.D. 23, these beliefs and customs are believed to be a normative influence on the Mennonite farmers of the region. Non-Mennonite farmers, with a different, more varied array of beliefs and customs, are influenced by a different set of norms. It is believed that differences based on these factors translate into different land acquisitions behaviours. The hypotheses in Chapter Three are an attempt to relate the different normative influences with the different land acquisition behaviours. Evidence is presented in this chapter to determine whether there is support for these hypotheses or not.

5.2 Sample Quality

The survey measured farm size and the age of farmers.[1] Both variables were also measured for farmers in I.D. 23 in the 1986 Census of Agriculture. Expected frequencies for the number of farms, per farm size category, were calculated from the Census data. These frequencies were compared to the number of farms, per farm size category, drawn from the survey data. Table 5.1 shows that there were fewer small farms and more large farms in the survey than expected. This

Table 5.1
Farms classified by size: Observed frequencies compared to expected frequencies

Size of holdings (in acres)[1]	Number of farms observed[2]	Number of farms expected[3]
70 - 239	8 (6.9%)	19.3 (16.1%)
240 - 399	7 (3.8%)	14.5 (12.1%)
400 - 559	10 (8.2%)	19.6 (16.4%)
560 - 75915	15 (12.3%)	18.1 (15.1%)
760 - 1119	31 (25.6%)	22.3 (18.6%)
1120 - 1599	14 (11.5%)	4.1 (3.4%)
1600 - 2239	13 (10.7%)	6.0 (5.0%)
	121	119.5

Chi-square = 63.78; d.f. = 7; p < .01

1. Categories are listed by acres, not hectares, to confrom with "the classification system employed in Source 3 below.
2. Source: Survey data.
3. Source: 1986 Census of Agriculture for Alberta: M.D., I.D., and County Data by Region, Edmonton: Statistics Branch, Alberta Agriculture, 1987.

suggests that farmers with large farms were over-represented in the sample, and that farmers with small farms were under-represented. Examination of the age variable (Table 5.2) suggests that the sample was representative according to this variable.

Table 5.2
Farmers ages: Observed frequencies compared with expected frequencies

Age categories	Observed farmers[1]	Expected farmers[2]
20 - 29	11 (9.0%)	20.0 (16.1%)
30 - 39	31 (25.6%)	33.7 (27.2%)
40 - 49	38 (31.4%)	35.0 (28.2%)
50 - 59	29 (23.9%)	25.0 (20.2%)
> 60	12 (9.9%)	10.0 (8.0%)
	121	123.7

Chi-square = 5.56; d.f. = 4; n.s.

1. Source: Survey data
2. Source: 1986 Census of Agriculture for Alberta: M.D., I.D., and County Data by Region, Edmonton: Statistics Branch, Alberta Agriculture, 1987

It appears the sample was biased toward farmers with larger, established farms. There are three possible explanations for this outcome. First, the relatively low return rate on questionnaires led to an over-representation of farmers from the larger farm size categories. Second, it could be argued that farmers with larger farms were better educated and more likely to be willing to respond to the questionnaire. Third, there is the possibility that the list of farmers obtained from the Alberta Wheat Pool was not current and may have under-represented farmers with small farms.

The sample has an additional fault. The review of provincial land acquisition data in Chapter Two showed that there were 242 Farm Development Lease dispositions in I.D. 23 between 1984 and 1988. Since no farmer acquired more than one Farm Development Lease, this meant that 242 of 590 farmers, or fortytwo percent (42%) of the farmers in the region acquired land under a Farm Development Lease. However, only 23 of 125 farmers (18%) (Table 5.4) in the sample acquired land, between 1984 and 1988, under a disposition from Public Lands. Furthermore, none of the 23 acquired land by way of a Special Posting. The discussion in Chapter Two showed, however, that 60 farmers acquired land by way of a Special Posting during the same period (Table 2.5). This suggests that the sample did not adequately represent those farmers in I.D. 23 who acquired land under Farm Development Leases, individually or by way of Special Postings, between 1984 and 1988.

5.3 Analysis of non-attitudinal variables

5.3.1 Farm-related variables

Mennonite and non-Mennonite farmers were similar in the types of farms operated (Table 5.3). Table 5.4 shows that there was no difference between the two groups in the types of land acquired, nor in the means by which Other land was acquired (Table 5.5).

It was not possible to test for differences in the amounts of Public, Private and Other land acquired by both groups due to the limitations of the chi-square test. For the Other land category, the number of acquisitions per year were collapsed and tested, but there was no difference between the two groups (Table 5.6). It was possible to sum the acquisition amounts for the three types of land. Table 5.7 suggests that non-Mennonite farmers acquired larger average amounts of Public, Private and Other land than Mennonite farmers.

Table 5.3
Types of farm by Mennonite and non-Mennonite farmers

Type of farm	Mennonite	Non-Mennonite
Grain and oilseeds	36	24
Livestock	2	0
Mixed farms	35	24

Chi-square = .007; d.f. = 2; n.s.

Table 5.4
Number of land acquisitions by Mennonite and non-Mennonite farmers

Type of land	Mennonite	Non-Mennonite
Public land	13	10
Private land	21	13
Other land	24	21
Total	58	44

Chi-square = 0.52; d.f. = 2; n.s.

For Public, Private and Other land, farmers were asked how the acquisition had been financed and why the acquisition had been made. Chi-square limitations prevented tests within each land type but, because these questions were the same for the three types, the responses were collapsed (Table 5.8, Table 5.9). For all three types, Mennonite and non-Mennonite farmers did not differ in the way land acquisitions were financed, nor in their reasons for acquiring land.

Table 5.5
Methods used in acquisitions of Other land by Mennonite and non-Mennonite farmers

Method	Mennonite	Non-Mennonite
Leased cleared land	11	5
Cleared own land	18	13
Other methods	9	7

Chi-square = 0.6; d.f. = 2; n.s.

Table 5.6
Acquisitions of Other land by Mennonite and non-Mennonite farmers: 1984-1988

Year	Mennonite	Non-Mennonite
1984	4	5
1985	8	5
1986	5	7
1987	8	5
1988	11	5

Chi-square = 2.79; d.f.= 4; n.s.

Respondents were asked about factors which prevented them from acquiring Public land, and why they decided not to acquire Public land. Chi-square limitations prevented a test on the first variable (Table 5.10). Mennonite and non-Mennonite reasons for deciding not to acquire Public land were similar (Table 5.11).

Table 5.7
Average acquisitions of land by Mennonite and non-Mennonite farmers

Type of land	Mennonite acquisitions	Average acquisition (hectares)	Non-Mennonite acquisitions	Average acquisition (hectares)
Public	13	84.5	15	154.4
Private	27	114.9	14	132.3
Other	36	86.4	27	105.4

Table 5.8
Financing of land acquisitions by Mennonite and non-Mennonite farmers

Financing	Mennonite	Non-Mennonite
1. General farm revenues	15	16
2. Off-farm earnings	20	18
3. Commercial loan	22	11
4. Family loan, or Agriculture Development (ADC) Corporation loan	7	6
5. Sale of assets or other methods	9	8

Chi-square = 2.35; d.f. = 4, n.s.

In examining land holdings, Table 5.12 shows there was no difference between the two groups in the number of farmers holding land under the five types of land holding. However, Table 5.13 shows the *average* land holdings for the two groups within each of the land holding categories, and a significant difference in the average amount of Titled land held by Mennonite and non-Mennonite farmers. Non-Mennonite farms were significantly larger than Mennonite farms (Table 5.14).

Table 5.9
Reasons for land acquisitions by Mennonite and non-Mennonite farmers

Reasons	Mennonite	Non-Mennonite
1. To expand or to farm full time	8	6
2. To expand in order to increase income	12	11
3. The price of the land and/or its characteristics were attractive	7	7
4. The location of the land was attractive	16	10
5. To make better use of machinery	6	6
6. Land was acquired for children or for another person	7	2

Chi-square = 2.55; d.f. = 5, n.s.

5.3.2 Personal Attributes

Mennonite and non-Mennonite farmers were similar in the length of time they had owned their farms (Table 5.15), and in the number of years they considered farming to have been their full-time occupation (Table 5.16).

The average age of farmers in the two groups was similar: 42.9 years for Mennonite farmers, and 43.9 for non-Mennonite farmers. The income levels of both groups were similar (Table 5.17), as was their involvement in off-farm work activity (Table 5.18).

Table 5.10
Reasons for non-acquisitions of Public land by Mennonite and non-Mennonite farmers

Reasons	Mennonite	Non-Mennonite
1. No land was available	2	1
2. Available land was too far away	2	1
3. Land applied for was reserved for other uses	1	6
4. Land was applied for through a Regular Posting but awarded elsewhere	11	6
5. Land was applied for through a Special Posting but awarded elsewhere	1	-
6. No reason given	1	-

It was expected that Mennonite farmers would have larger families. This expectation is confirmed by Table 5.19, which shows that Mennonite farmers had, on average, two children more than non-Mennonite farmers. Table 5.20 shows that more Mennonite farmers reported children farming in I.D. 23, more children to whom important help was given to start farming, and more children who were expected to start farming in the future.

When respondents were asked why they farmed, similarities among the many answers given made it possible to classify the answers into eight general responses (Table 5.21). There were significant differences between Mennonite and non-Mennonite farmers for two of the eight responses.

Table 5.11
Reasons for deciding not to acquire Public land by Mennonite and non-Mennonite farmers

Reasons	Mennonite	Non-Mennonite
1. Additional land was not needed	4	6
2. Additional debt needed to acquire land was not desired	16	5
3. Land was deemed too expensive	15	15
4. Cost of clearing land was deemed too expensive	14	10
5. There was no desirable public land nearby, and/or it was decided to wait for better crop prices	8	6

Chi-square = 4.99; d.f. = 4; n.s.

Table 5.12
Land holdings of a given type by Mennonite and non-Mennonite farmers

Type	Mennonite	% of group	Non-Mennonite	% of group
1. Titled *Chi-square = .23; d.f. = 1; n.s.*	65	87%	39	76%
2. Farm Development Sale *Chi-square = .69; d.f. = 1; n.s.*	24	32%	21	41%
3. Farm Development Lease *Chi-square = .14; d.f. = 1; n.s.*	11	14%	7	13%
4. Leased *Chi-square = .1; d.f. = 1; n.s.*	23	31%	18	35%
5. Other (i.e. Grazing Lease or Permit, Cultivation Permit) *Chi-square = 1.47; d.f. = 1; n.s.*	10	13%	11	21%

Table 5.13
Average land holdings by Mennonite and non-Mennonite farmers

Type of land	Mennonite (hectares)	Non-Mennonite (hectares)	p <
Titled	259.6	424.2	.01
Farm Development Sale	117.1	218.5	n.s.
Farm Development Lease	123.3	161.6	n.s.
Lease (private)	169.6	224.2	n.s.
Other (i.e. Grazing Lease or Permit, Cultivation Permit)	227.8	393.6	n.s.

Table 5.14
Average farm size by Mennonite and non-Mennonite farmers

	Mennonite (hectares)	Non-Mennonite (hectares)	p <
Average farm size	381.7	624.6	.01

Table 5.15
Length of farm ownership by Mennonite and non-Mennonite farmers

Years	Mennonite	Non-Mennonite
1 - 9 years	11	15
10 - 19 years	27	13
20 - 29 years	29	13
> 30 years	4	6

Chi-square = 7.55; d.f. = 3; n.s.

Table 5.16
Number of years farming considered a full-time occupation by Mennonite and non-Mennonite farmers

Years	Mennonite	Non-Mennonite
1 - 9 years	11	10
10 - 19 years	23	13
20 - 29 years	17	5
> 30 years	7	7
Never a full-time occupation	14	7

Chi-square = 6.22; d.f. = 4; n.s.

Table 5.17
Income by Mennonite and non-Mennonite farmers

Income level	Mennonite	Non-Mennonite
> $100,000	17	14
$50,000 - $99,999	22	17
$25,000 - $49,999	15	12
< $24,999	17	5

Chi-square = 3.44; d.f. = 3; n.s.

Table 5.18
Off-farm work by Mennonite and non-Mennonite farmers

	Mennonite	Non-Mennonite
Have you done off-farm work since 1984 (including 1984)?		
Yes	58	34
No	15	14
Chi-square = 1.13; d.f. = 1; n.s.		
How often did you do off-farm work?		
One year	3	2
Two years	4	3
Three years	1	2
Four years	1	-
Every year	48	26
Would you have been able to keep farming without the money you made from off-farm work?		
Yes	18	9
No	43	27
Chi-square = .23; d.f. = 1; n.s.		

Note: Questions are presented as they appeared in the Questionnaire (Appendix One)

Table 5.19
Average number of children by Mennonite and non-Mennonite farmers

	Mennonite	Non-Mennonite	p <
Average number of children	5.13	3.07	.01

Table 5.20
Farming activity of farmer's children in I.D. 23 by Mennonite and non-Mennonite farmers

	Mennonite	Non-Mennonite
Number of children farming in I.D. 23	57	16
Number of children who started their own farms in I.D. 23: 1984-1988	30	4
Number of children to whom important help was given to start their own farms: 1984-1988	34	11
Number of children expected to start their own farms in I.D. 23 in the future	15	7

Table 5.21
Reasons for farming by Mennonite and non-Mennonite farmers

Reason	Mennonite	% of group	Non-Mennonite	% of group
I farm for the sake of my family/children *Chi-square = 6.4; d.f. = 1; p < .01*	31	41.8%	7	13.7%
I was raised on a farm/ I have farmed all of my life *Chi-square = .02; d.f. = 1; n.s.*	12	16.2%	9	17.6%
I farm for the way of life it provides for me *Chi-square = 1.99; d.f. = 1; n.s.*	28	37.8%	11	21.5%
I farm for the challenge it provides for me *Chi-square = .37; d.f. = 1; n.s.*	25	33.7%	21	41.1%
I farm for the independence it provides for me *Chi-square = 1.41; d.f. = 1; n.s.*	11	14.8%	13	25.4%
I farm because it is part of my religion/culture, or because I consider farming a "mission" *Chi-square = 4.22; d.f. = 1; p < .05*	13	17.5%	2	3.9%
I farm for money *Chi-square = .003; d.f. = 1; n.s.*	7	9.4%	5	9.8%
Miscellaneous reasons *Chi-square = .07; d.f. = 1; n.s.*	6	8.1%	6	9.8%

5.4 Analysis of attitudinal variables

5.4.1 Attitudes toward farming

The attitudes of Mennonite and non-Mennonite farmers toward farming were examined within the twenty-statement Likert-type scale (Table 5.22). Eight of the twenty statements (40%) exhibited statistically significant differences.

These statements were grouped according to the conceptual framework (see Chapter Three). The category means of the Mennonite and non-Mennonite farm groups were tested and the results are shown in Table 5.23. Three of the five (60%) categories exhibited statistically significant differences.

Attitudes toward farming were also measured so that all statement means were collapsed to produce only two means: a Mennonite and a non-Mennonite scale mean. The result of the test of these two means (Table 5.24) was non-significant.

5.4.2 Attitudes toward Public Land disposition

The examination of Mennonite and non-Mennonite attitudes toward Public land disposition (Table 5.25) shows that three of ten statements (30%) exhibited statistically significant differences.

These statements were also combined according to the conceptual classification (see Chapter Three), and the category means of the Mennonite and non-Mennonite groups were tested (Table 5.26). One of the three (33%) categories exhibited a statistically significant difference.

Table 5.22
Attitudes toward farming (individual statements): Mennonite and non-Mennonite farmers

Scale items	Cat.	M Mean	NM Mean	F	< p
1. Farmers should take pride in owning a farm	Exp.	4.10	4.50	1.40	.01
2. A successful farmer should not expect to be recognized for his farming achievements	Soc.	2.60	2.09	1.02	.01
3. Farmers should be involved in their local farming community	Soc.	4.01	4.05	1.08	n.s.
4. Farm families are at a disadvantage when they live so far from towns and cities	Cul.	2.93	3.01	1.29	n.s.
5. Farmers should work off-farm to make money to re-invest in the farm	Ins.	2.29	2.76	1.35	.05
6. Saving money for retirement should not be a major concern for farmers	Ins.	3.17	2.43	1.29	.01
7. Farming should be continued as a family tradition	Soc.	3.79	3.45	1.17	n.s.
8. There is little value in doing farm work	Int.	1.95	1.88	1.18	n.s.
9. Farming allows farmers to be their own boss	Int.	3.75	3.90	1.20	n.s
10. Farmers do not need special special skills to farm	Exp.	2.10	1.68	1.43	.05
11. Farming decisions should be made according to a farmer's religious beliefs	Cul.	3.15	2.29	1.20	.01

Table 5.22 (cont.)

12. Farm family members should not work on the farm along with the farmer	Soc.	1.50	1.64	1.03	n.s.
13. Farmers should make as much money from farming as they can	Ins.	3.77	3.96	1.19	n.s.
14. Farmers do not enjoy the farm work they do	Int.	1.70	1.10	2.79	n.s.
15. Farming is a healthy outdoor occupation	Int.	3.78	3.47	1.87	n.s.
16. Farmers should not run their farms according to the standards of a religious farming community	Cul.	2.70	3.54	1.17	.01
17. The challenge of farming makes the farmer a more capable person	Exp.	3.97	4.00	1.17	n.s.
18. Farmers should not always try to make their farms more profitable	Ins.	2.31	2.13	1.07	n.s.
19. Farm families benefit from living apart from many of the problems of today's society	Cul.	3.90	3.42	1.24	.01
20. Farmers do not get self-respect from farming	Exp.	2.15	1.92	1.04	n.s.

Note: Exp.=Expressive, Cul.=Cultural, Soc.=Social, Int.=Instrumental, and Ins.=Intrinsic

Table 5.23
Attitudes toward farming (orientation categories): Mennonite and non-Mennonite farmers

Orientation categories	Mennonites	Non-mennonites		
	Mean	Mean	F	< p
Cultural	3.25	2.75	1.04	.01
Instrumental	3.07	3.51	1.17	.01
Expressive	3.91	4.22	1.30	.01
Intrinsic	3.95	3.85	1.37	n.s.
Social	3.90	3.94	1.25	n.s.

Table 5.24
Attitudes toward farming (scale scores): Mennonite and non-Mennonite farmers

	Mennonites	Non-mennonites		
	Mean	Mean	F	< p
Scale score	72.43	73.19	1.28	n.s.

Table 5.25
Attitudes toward Public Land disposition (individual statements): Mennonite and non-Mennonite farmers

Statements	Cat.	M Mean	NM Mean	F	< p
1. Public land should not be made available to farmers when the agricultural economy is depressed	Eco.	2.17	2.26	1.87	n.s.
2. Public land should be made available to farmers, even if the land is needed for the forest industry	Res.	2.94	2.87	1.37	n.s.
3. Public land should be made available to the sons of local farmers whenever they want to start their own farms	Com.	3.79	3.36	1.39	.05
4. Public land should not be made available for farming because of the high cost to the provincial government of providing services to new farming areas	Eco.	1.84	1.81	1.03	n.s.
5. Public land should be made available to farmers to provide an economic benefit to I.D. 23	Eco.	3.91	3.83	1.17	n.s.
6. Public land should not be made available to beginning farmers until the cost of borrowing money to buy and clear land comes down	Com.	2.45	2.48	1.52	n.s.
7. Public land should be made available to beginning farmers to start their own farm, because farming is a good occupation for young people	Com.	4.05	3.50	1.69	.01

Table 5.25 (cont.)

8. Public land should not be made available to beginning farmers who live outside I.D. 23	Com.	3.16	2.11	1.02	.01
9. Public land should be made available for farming even though good farmland may be up for sale elsewhere in Alberta	Eco.	3.94	3.77	1.71	n.s.
10. Public land should not be made available for farming if the land is needed to protect wildlife populations	Res.	2.91	3.19	1.04	n.s.

Note: Eco.=Economic, Res.=Resource, and Com.=Community

Table 5.26
Attitudes toward Public Land disposition (orientation categories): Mennonite and non-Mennonite farmers

Orientation categories	Mennonites	Non-mennonites		
	Mean	Mean	F	< p
Resource	2.95	2.61	1.08	.01
Economic	3.90	3.69	2.85	n.s.
Community	3.55	3.35	2.57	n.s.

Attitudes toward Public Land disposition were also measured so that the scale score means of the Mennonite and non-Mennonite groups were tested. The result was non-significant (Table 5.27).

Table 5.27
Attitudes toward Public Land disposition (scale scores): Mennonite and non-Mennonite farmers

	Mennonites Mean	Non-mennonites Mean	F	< p
Scale score	35.72	33.43	3.50	n.s.

5.5. Interpretation

5.5.1 Non-attitudinal variables

Although the characteristics of Mennonite and non-Mennonite farmers were similar according to many of the variables examined, some of these variables did suggest ways in which the two groups might differ. The discussion in this section begins with a review of these variables.

Table 5.4 shows the number of land acquisitions by Mennonite and non-Mennonite farmers across three categories: Public, Private and Other land. These results suggest that farmers in I.D. 23 were as active, if not more active, in acquiring Private and Other land in comparison to Public land. This hints at a level of farm-related land acquisitions greater than the level of Public land acquisitions. However, the only data available on Private and Other land acquisitions was generated by the survey. With no independent source of similar data, there is no way to confirm this speculation.

Table 5.11 shows that most Mennonite and non-Mennonite farmers who decided not to acquire Public land did so because of the cost involved, a possible indication of a latent demand for land. If the cost of acquiring and clearing land declines in future, Public land acquisitions might increase again. Furthermore, the results of Table 5.11 may partially explain the results in Table 5.4. If fewer farmers were acquiring Public land because of the associated costs, more farmers may have been acquiring Private and Other land as less expensive options.

The results in Table 5.18 indicate the importance of off-farm work in the agricultural economy of I.D. 23. The majority of Mennonite and non-Mennonite farmers surveyed had done off-farm work between 1984 and 1988, and the majority of these farmers had worked off-farm every year. More than half the farmers surveyed would not have continued farming without off-farm revenues. The loss of traditional sources of off-farm income (e.g. forestry, construction, trucking) in I.D. 23 would be a threat to the farmers and to the regional economy.

The results in Table 5.7 offer partial support for the conclusions reached at the end of Chapter Two: that Mennonite farmers had been more active in acquiring Public land than non-Mennonite farmers, but that non-Mennonite farmers had acquired larger amounts of Public land. Table 5.7 shows that non-Mennonite acquisitions of Public Land were almost twice as large as those of Mennonite farmers.

Turning to the significant differences between the two groups, Table 5.14 shows that non-Mennonite farms were larger than Mennonite farms, despite the fact that non-Mennonite farmers had larger holdings within only one of the five land holding types (Table 5.13). However, farmers held more Titled land than any other type (Table 5.12). The significant difference in Table 5.13, for Titled land, is probably the main factor contributing to the difference in average farm size in Table 5.14.

Given the preference for a family-oriented way of life among the Mennonites, the finding that Mennonite farmers had larger families (Table 5.19) was expected. While the resuslts in Table 5.20 might have suggested that more Mennonite children were involved, or likely to be involved, with farming in I.D. 23, no inferences were drawn from the results. First, the number of responses was small. Second, the relative populations of children for the Mennonite and non-Mennonite groups were unknown. Without these figures, it was not possible to determine the proportions, of the respective populations, represented by the results in Table 5.20.

In Table 5.21, the two responses on which Mennonite and non-Mennonite farmers differed were revealing. They showed that farming for the sake of the family, or farming as a part of the farmers' religion or culture, were more important to the Mennonite farmers than the non-Mennonite farmers. The results in Table 5.21 showed that the most commonly-cited reasons for farming, among the Mennonites, were for the sake of the family, or for the way of life which farming provided for them. The most commonly-cited non-Mennonite reasons were for the challenge and the independence that farming provided for them. These results suggested that Mennonite and non-Mennonite differed in their reasons for farming.

5.5.2 Attitudinal variables

Table 5.24 shows the mean scale scores of the Mennonite and non-Mennonite farmers with respect to their attitudes toward farming, and no significant difference between the two groups at this general level of investigation. However, the attitudes of the two groups did differ at the intermediate and specific levels of investigation. This illustrates the usefulness of having examined the attitude of the two groups in this way. Differences which were not apparent at the general level emerged at more detailed levels of investigation.

The examination of attitudes within the Gasson-based framework (Table 5.23) shows that Mennonite and non-Mennonite attitudes differed for three of the five orientation categories. Mennonite farmers had a positive Cultural orientation toward farming, compared to a negative non-Mennonite Cultural orientation. Non-Mennonite farmers had more positive Instrumental and Expressive orientations. It has been argued above (see Chapter Three) that Mennonite farmers had a "social" inclination toward farming, and that the inclination of non-Mennonite farmers toward farming was of an "individual" nature. The results in Table 5.24 provide some support for this argument.[2]

Statements in the Cultural category dealt with the role of families, and of religious beliefs and standards, in farming. Positive Mennonite responses to Cultural statements suggest that Mennonite farmers were more willing to embrace these ideas as part of farming. Non-Mennonite farmers were less willing to do so. Where Mennonite farmers were prepared to accept the influence of these social conditions on their behaviour as farmers, non-Mennonite farmers were less likely to.

Gasson's (1973) definition of the Instrumental orientation as "farming ... as a means of obtaining income and security with pleasant working conditions" (p. 527), and the statements created for this category suggest an individual, rather than social, inclination toward farming. Given the argument above, it follows that non-Mennonite farmers had the more positive Instrumental orientation toward farming.

Non-Mennonite farmers had a more positive Expressive orientation toward farming: the most positive orientation for either group across all five categories. Gasson's (1973) characterization of the Expressive orientation as "a means of self-expression or personal fulfillment" (p. 527) describes an individual, not social, inclination toward farming. This result provides further support for the argument that non-Mennonite farmers were individually-oriented in their outlook on farming.

At the specific level of investigation, there were significant differences between Mennonite and non-Mennonite farmers for eight of the twenty attitude statements (Table 5.22). These statements add further support to the argument above concerning the "social" versus "individual" inclinations of the two groups. The three statements on which Mennonite farmers had a higher or lower mean score than non-Mennonite farmers (depending on the wording of the statement: positive or negative) dealt with the role of religion and the family in farming. The more positive Mennonite responses to these statements support the argument that Mennonite farmers placed greater importance on the role of religion, and on the role of the family in farming, than non-Mennonite farmers. The five statements on which non-Mennonite farmers had higher or lower scores focus on the individual farmer, and touch on such notions as pride (Statement 1), recognition (Statement

2), and personal skills (Statement 10). This demonstrates that non-Mennonite farmers placed greater importance on the fulfillment, and satisfaction of, the individual farmer through farming.

For the analysis of the attitudes toward the continuation of Public land disposition, Table 5.25 shows significant differences for three of the ten statements. Each statement dealt with the relationship between "the sons of local farmers", or "beginning farmers", and Public land disposition. For two of the three statements (Statements 3 and 7), Mennonite attitudes were more positive toward making Public land available to these farmers. This may have been a reflection of the Mennonite farming community's desire to see Public land availability maintained so that young Mennonite farmers would be able to start farms in the future. Furthermore, Mennonite attitudes were more positive toward restricting the availability of Public land in I.D. 23 to farmers from *outside* the region. This may have indicated a belief that the Mennonite farming community should gain the maximum benefit from the remaining arable land base in I.D. 23.

Conversely, the more positive non-Mennonite attitude toward this statement may have reflected the belief that increased agricultural land expansion, by local or non-local farmers, contributes to the growth of the economic base of I.D. 23.[3] Within the non-Mennonite community, there appeared to be less concern with maintaining remaining arable lands for their own future use, and more concern with making those lands available to anyone who might contribute to further economic growth in the region. There appeared to be the hope, within the non-Mennonite farming community, that economic growth would lead to improved roads and other services, and to the development of secondary industry. In the words of one non-Mennonite farmer: "we need more industry in this community.

Anything that started in this community was mostly sports, which is not what is really needed. What we do need is industry, like a creamery or cheese factory."

Within the conceptual classification (Table 5.26), the Resource category yielded a significant difference between Mennonite and non-Mennonite farmers, suggesting the two groups had different views on Public land as a resource. The two statements in the Resource category (Statements 2 and 10) suggested making Public land available for farming, in competition with other resource uses: forestry and wildlife protection. The more positive Mennonite response suggests greater willingness to place the needs of farmers for Public land ahead of the needs of the forest industry and wildlife populations.

No significant difference was found between Mennonite and non-Mennonite farmers in their overall attitude toward Public land disposition (Table 5.27). This result also shows that it was worthwhile to examine attitudes at more than one level of investigation. The results gleaned from the intermediate and specific levels of investigation show that attitudinal differences did exist between Mennonite and non-Mennonite farmers. It has also been possible to draw meaning from these differences to show how Mennonite and non-Mennonite farmers differed in their attitudes toward farming and Public land disposition.

5.6 Summary

Differences between the two groups can now be summarized. The evidence presented suggested that non-Mennonite farmers acquired larger amounts of Public, Private and Other land, on average, that Mennonite farmers. Non-Mennonite farmers had larger farms. Mennonite farmers, on the other hand, had larger families and more children involved and likely to be involved in farming. Mennonite and non-Mennonite farmers farmed for different reasons. Mennonite farmers appeared to farm more for the sake of their families and children, and for the way of life offered by farming. Non-Mennonite farmers appeared to farm primarily because of the challenges and independence that farming offered them.

The attitudes of the two groups toward farming differed at the intermediate and specific levels of investigation. Mennonite Cultural attitudes were more positive, while non-Mennonite Instrumental and Expressive attitudes were more positive. Differences at the specific level of investigation appeared to be related to "social" versus "individual" inclinations toward farming. Mennonite farmers were more strongly disposed toward making Public land available to local farmers, at the expense of non-local farmers. Compared to Mennonite farmers, non-Mennonite farmers had a more positive attitude toward balancing the needs of the forestry industry, and of wildlife populations, against the Public land needs of farmers.

Gasson (1973) argued that it was important to learn "why" (p. 521) farmers farm. The interpretation above suggests that Mennonite and non-Mennonite farmers farmed for different reasons. Mennonite farmers appeared to farm to attain certain "social" objectives. Achievement of those objectives while farming was likely to influence their farming behaviour. Non-Mennonite farmers appeared to farm in order to attain "individual" objectives, so that their farming behaviour was more likely to be directed toward attainment of those objectives.

Given these conclusions, it is now possible to offer an answer to the question raised at the end of the second chapter: why were Mennonite farmers more active in acquiring Public land, yet non-Mennonite farmers acquired greater amounts of Public land?

Consider the array of results drawn from the examination of non-attitudinal and attitudinal variables. Mennonite farmers had larger families, with more children active in farming in I.D. 23. Mennonite farmers were more disposed toward accepting an influential role for the family, and for religious beliefs, in farming. As one Mennonite farmed noted on the questionnaire: "I would like to comment on why this area is increasing in developing farmland. We have and hope to teach our children the values of farming and a life of farm satisfaction and the love for land". Mennonite farmers were more disposed toward making Public land available to local farmers, yet more disposed toward restricting the access to Public land in I.D. 23 for non-local farmers. These results suggest that the Mennonite farmers had different reasons for wanting Public land and, simply put, wanted it more than non-Mennonite farmers did. This suggests an association between the greater desire for Public land, and the higher level of activity in acquiring Public land.

In a conversation with a Mennonite farmer during the field work, he indicated that he had acquired a smaller amount of Public land than he had been capable of farming. When asked why he settled for less, his response was that he did not want to appear "greedy". Another Mennonite farmer wrote on his questionnaire: "Farmers should run their farm according to the will of God - to live my life for him, by helping to supply food for the world's hungry population with joy and generosity". This type of comment suggested that Mennonite farmers were more likely to acquire smaller amounts of Public land to avoid the appearance of being "greedy", or to show their "generosity" by sharing the limited amount of good, arable land among the other members of the Mennonite farming community.

How, then, to explain fewer acquisitions by non-Mennonite farmers, yet acquisitions that were still larger than those of Mennonite farmers? The evidence presented showed that fewer non-Mennonite children (Table 5.20) and non-Mennonite beginning farmers (see Table 2.5) were starting their own farms. Perhaps prospective farmers in the non-Mennonite farming community were less likely to be directed toward farming, as an appropriate way of life, than prospective Mennonite farmers, and might be more to choose other careers. Factors such as these suggest an explanation for lower levels of Pubic land acquisition by non-Mennonite farmers. They still do not explain the higher average acquisition rate. Perhaps the best explanation is that non-Mennonite farmers, with their "individual" inclination toward farming, were less concerned with appearing to be "greedy" when acquiring land, and more concerned with acquiring an amount of land deemed necessary for the operation of their farms.

The discussion can turn to a review of the research hypotheses. The first hypothesis suggested that the attitudes of Mennonite farmers toward farming were more positive than those of non-Mennonite farmers. The overall attitudes of the two groups were similar. There was no support for this hypothesis.

The second hypothesis argued that the Cultural attitudes of Mennonite farmers toward farming were more positive than the Cultural attitudes of non-Mennonite farmers toward farming. There was support for this hypothesis. The third hypothesis predicted that the Instrumental attitudes of non-Mennonite farmers toward farming were more positive than the Instrumental attitudes of Mennonite farmers. There was support for this hypothesis also. The fourth hypothesis predicted that the Expressive attitudes of non-Mennonite farmers toward farming were more positive than the Expressive attitudes of Mennonite farmers toward farming. There was support for this hypothesis as well. The fifth and sixth hypotheses predicted that the Instrinsic and Social attitudes of Mennonite farmers toward farming were more positive than the Instrinsic and Social attitudes of non-Mennonite farmers toward farming. The seventh and final hypothesis suggested that Mennonite farmers had more positive attitudes toward continued Public land disposition than non-Mennonite farmers. The attitudes of the two groups were similar in each case, and there was no support for these last three hypotheses.

The examination of attitudes at the three levels of investigation appears to contradict some of the above conclusions, with respect to hypotheses for which there was no support. No difference was found in the attitudes of the two groups toward farming and Public land disposition at the general level. However, examination of the attitudes toward farming and Public land disposition at the intermediate and specific levels did reveal differences between the two groups. More importantly, the meaning given to these differences led to an explanation of the way in which the different attitudes of the two groups contribute to different behaviours in acquiring land for agricultural land expansion.

Notes

1. It was not possible to compare other variables to determine how representative the sample was in comparison to the population. The farm size and age variables were the only variables that could be directly compared to the 1986 Census of Agriculture data contained in the Alberta Agriculture publication. The income and farm type variables, for example, were measured differently in the survey compared to the way they were measured in the 1986 Census.
2. It must be noted that the results in Table 5.24 also showed no significant difference between Mennonite and non-Mennonite farmers for the Social orientation category. Since such a difference had been hypothesized, this result tends to weaken the support for this conclusion.
3. The desire within the non-Mennonite agricultural community to expand the local economic base through further agricultural land expansion was one of the factors behind the support, by non-Mennonite farmers, for the Jean D'Or Prairie Sub-Regional Integrated Resource Plan 1985). This Plan identified specific areas of land east of Fort Vermilion for further agricultural expansion. Ironically, despite the non-Mennonite support for this Plan, the first farmers to acquire any of these identified lands were Mennonite farmers. They acquired the land in the 1989 Special Posting.

CHAPTER SIX

ANALYSIS AND INTERPRETATION OF RESULTS FOR ACQUIRING AND NON-ACQUIRING FARMERS

6.1 Introduction

According to the conceptual framework outlined in Chapter Three, the analysis of attitudinal and non-attitudinal variables was to be carried out to determine whether there were differences between Mennonite and non-Mennonite farmers, and whether or not these differences helped to explain the agricultural land expansion which had occurred in I.D. 23 between 1984 and 1988. During the course of this analysis, a separate, unanticipated trend emerged. Some farmers had acquired no Public, Private or Other land between 1984 and 1988, while some farmers had acquired one, two, or in some cases, all three types of land. In fact, 65 farmers in the sample had acquired land, while 60 farmers had acquired no land at all. This discovery warranted further investigation, since it raised two questions. First, were there differences between the "acquiring" and "non-acquiring" farmers? Second, did these differences also contribute toward an explanation of the agricultural land expansion in I.D. 23?

This second investigation was carried out for two reasons. First, the examination of the provincial land acquisition data had established that 242 farmers in I.D. 23 (42% of the population) had acquired Public land between 1984 and 1988. Furthermore, the analysis in the previous chapter offered the speculation that farmers in I.D. 23 might have been as active, if not more active, in acquiring Private and Other land as they were in acquiring Public land. Here, on the other hand, were a group of farmers who had acquired no land at all.

This discovery offered the opportunity to examine some of the characteristics of a group of farmers whose presence had not been anticipated.

Second, the intent of this study was to provide an explanation of agricultural land expansion in I.D. 23. It would have been a mistake not to look for differences between a group of farmers that had participated in agricultural land acquisition (acquirers), and a group that had not particpated in this process (non-acquirers).

6.2 Hypotheses

This further investigation led to testing of additional hypotheses. The first hypothesis predicted that:

> Non-acquiring farmers had larger farms than acquiring farmers.

It was believed that acquiring farmers had been acquiring land to build up their farms, and that non-acquiring farmers had stopped acquiring land because their farms were at a desired size. This suggests that acquiring farmers were at earlier stages in their farming careers and were more likely to have smaller farms than non-acquiring farmers.

The second hypothesis predicted:

> Non-acquiring farmers were older than acquiring farmers.

If non-acquiring farmers were at later stages in their farming careers, this suggests they would have been farming longer than acquiring farmers and would, therefore, be older.

The third hypothesis suggested:

> Non-acquiring farmers had larger incomes than acquiring farmers.

It was felt that if non-acquiring farmers had larger farms, as hypothesized, then they might also have higher incomes when compared to acquiring farmers, since a large farm should generate more income than a small farm.

The Gasson framework had yielded differences between Mennonite and non-Mennonite farmers. By re-applying this framework, it was hoped that attitudinal differences between acquiring and non-acquiring farmers would emerge. Therefore, the fourth hypothesis predicted:

> The Cultural attitudes of acquiring and non-acquiring farmers toward farming were similar.

Attitude statements in the Cultural category were created to investigate hypothesized differences in Mennonite and non-Mennonite attitudes. Since Mennonite and non-Mennonite farmers were found in both the acquiring and non-acquiring groups,[1] it was suspected that the different Mennonite and non-Mennonite Cultural attitudes would, in effect, cancel each other out within the acquiring and non-acquiring groups.

The fifth hypothesis predicted:

> The Expressive attitudes of acquiring farmers toward farming were more positive than the Expressive attitudes of non-acquiring farmers toward farming.

It was suspected that acquiring farmers were at a more intense stage in their farming careers than most non-acquiring farmers and that the acquiring farmers would have a greater appreciation for the challenges and "personal fulfillment" (Gasson, 1973, p. 527) to be gained from farming.

The sixth hypothesis proposed:

> The Instrinsic attitudes of acquiring farmers were more positive toward farming than the Instrinsic attitudes of non-acquiring farmers toward farming.

The reasoning for this hypothesis was similar to that for the fifth hypothesis. It was felt that acquiring farmers, at a more demanding period in their farming careers, would place greater value on "farming ... as an activity in its own right" (Gasson, 1973, p. 527).

The seventh hypothesis suggested:

> The Social attitudes of non-acquiring farmers toward farming were more positive than the Social attitudes of acquiring farmers toward farming.

It was felt that if non-acquiring farmers were operating established farms, which might require less on-going work, they would have more time, and would appreciate having more time, to spend with their families and in their communities.

The eighth hypothesis proposed that:

> The Instrumental attitudes of acquiring farmers toward farming were more positive than the Instrumental attitudes of non-acquiring farmers toward farming.

Since it was felt that acquiring farmers were still building their farms, it was also suspected that the cost of acquiring land to build a farm, in addition to meeting the operational costs of farming, would give the acquiring farmers a greater need and appreciation for income.

It has been proposed that the Expressive, Intrinsic and Instrumental attitudes of acquiring farmers toward farming were more positive than those or non-acquiring farmers. Both groups were believed to have similar Cultural attitudes, while non-acquiring farmers were believed to have more positive Social attitudes. The suggestion that acquiring farmers had more positive attitudes in three of the five categories suggested the ninth hypothesis:

> The attitudes of acquiring farmers toward farming were more positive than the attitudes of non-acquiring farmers toward farming.

The tenth and final hypothesis predicted:

> The attitudes of acquiring farmers toward the continuation of Public land disposition were more positive than those of non-acquiring farmers.

Since it has been argued that acquiring farmers were still building their farms, it was felt that they would have a stonger interest in seeing that Public land continue to be made available for farming. While not solely reliant on Public land for further growth, it was believed their potential demand for Public land in the future would lead to a more positive attitude on this variable.

6.3 Analysis of non-attitudinal variables

6.3.1 Farm-related variables

Table 6.1 shows the breakdown of land holdings between acquiring and non-acquiring farmers. The results show that acquiring farmers held more land under Farm Development Leases and Other land types than expected. Table 6.2 shows the breakdown of average amounts of land held under the various land holding types. The results show that acquiring farmers held significantly more Titled land than non-acquiring farmers. Table 6.3 shows that acquiring farmers

Table 6.1
Land holdings of a given type by acquiring and non-acquiring farmers

Type	Acquiring	% of group	Non-acquiring	% of group
1. Titled	65	83%	50	83%
Chi-square = .001; d.f. = 1; n.s.				
2. Farm Development Sale	31	47%	14	23%
Chi-square = .3.77; d.f. = 1; n.s.				
3. Farm Development Lease	14	21%	4	6%
Chi-square = 4.25; d.f. = 1; p < .05				
4. Leased	26	40%	15	25%
Chi-square = 1.62; d.f. = 1; n.s.				
5. Other (i.e. Grazing Lease or Permit, Cultivation Permit	17	26	4	6%
Chi-square = 6.22; d.f. = 1; p < .01				

had significantly larger farms than non-acquiring farmers.

6.3.2 Personal atttributes

There was a significant difference in the average age of farmers in the two groups. The average age of acquiring farmers was 40.7 years, compared to 46.2 years for non-acquiring farmers. Table 6.4 shows the distribution of income levels among acquiring and non-acquiring farmers. Acquiring farmers had higher income

Table 6.2
Average land holdings by acquiring and non-acquiring farmers

Type of land	Acquiring (hectares)	Non-acquiring (hectares)	p <
Titled	384.5	253.2	.01
Farm Development Sale	153.2	189.3	n.s.
Farm Development Lease	126.9	177.6	n.s.
Lease (private)	169.1	66.6	n.s.
Other (i.e. Grazing Lease or Permit, Cultivation Permit)	327.9	258.5	n.s.

Table 6.3
Average farm size by acquiring and non-acquiring farmers

	Acquiring (hectares)	Non-acquiring (hectares)	p <
Average farm size	609.1	335.5	.01

Table 6.4
Income by acquiring and non-acquiring farmers

Income level	Acquiring	Non-acquiring
> $100,000	25	6
$50,000 - $99,999	21	18
$25,000 - $49,999	10	17
< $24,999	7	15

Chi-square = 16.06; d.f. = 3; $p < .01$

levels than expected.

There was no difference between acquiring and non-acquiring farmers in the types of farms that they operated (Table 6.5). There was no difference between the two groups in the length of time they had owned their farms (Table 6.6), nor in the length of time they considered farming a full-time occupation (Table 6.7).

Table 6.5
Types of farm by acquiring and non-acquiring farmers

Type of farm	Acquiring	Non-Acquiring
Grain and oilseeds	29	31
Livestock	0	2
Mixed farms	35	24

Chi-square = 1.85; d.f. = 2; n.s.

Table 6.6
Length of farm ownership by acquiring and non-acquiring farmers

Years	Acquiring	Non-acquiring
1 - 9 years	19	10
10 - 19 years	21	19
20 - 29 years	19	23
> 30 years	5	6

Chi-square = 3.02; d.f. = 3; n.s.

Levels of activity in off-farm work among acquiring and non-acquiring farmers were similar (Table 6.8). Although non-acquiring farmers had more

Table 6.7
Number of years farming considered a full-time occupation by acquiring and non-acquiring farmers

Years	Acquiring	Non-acquiring
1 - 9 years	14	7
10 - 19 years	21	15
20 - 29 years	10	12
> 30 years	7	10
Never a full-time occupation	9	12

Chi-square = 4.25; d.f. = 4; n.s.

children, on average, than acquiring farmers (Table 6.9), the difference between the two was not significant.

Table 6.10 shows that more children of non-acquiring farmers were farming in I.D. 23, compared to children of acquiring farmers. The number of children who had started farms in I.D. 23 between 1984 and 1988 was approximately equal for both groups, as was the number of children who had received help to start their own farms. However, Table 6.10 suggests that more acquiring farmers' children were expected to start their own farms than non-acquiring farmers' children. Table 6.11 shows that the two groups did not differ in their reasons for farming.

Table 6.8
Off-farm work by acquiring and non-acquiring farmers

	Acquiring	Non-acquiring
Have you done off-farm work since 1984 (including 1984)?		
Yes	48	44
No	15	14
Chi-square = .0009; d.f. = 1; n.s.		
How often did you do off-farm work?		
One year	1	4
Two years	3	4
Three years	2	1
Four years	1	-
Every year	40	34
Would you have been able to keep farming without the money you made from off-farm work?		
Yes	11	16
No	41	29
Chi-square = 2.45; d.f. = 1; n.s.		

Note: Questions are presented as they appeared in the Questionnaire (Appendix One)

Table 6.9
Average number of children by acquiring and non-acquiring farmers

	Acquiring	Non-acquiring	p <
Average number of children	3.95	4.56	.01

Table 6.10
Farming activity of farmer's children in I.D. 23 by acquiring and non-acquiring farmers

	Acquiring	Non-acquiring
Number of children farming in I.D. 23	26	47
Number of children who started their own farms in I.D. 23: 1984-1988	16	18
Number of children to whom important help was given to start their own farms: 1984-1988	9	13
Number of children expected to start their own farms in I.D. 23 in the future	22	15

Table 6.11
Reasons for farming by acquiring and non-acquiring farmers

Reason	Acquiring	% of group	Non-acquiring	% of group
I farm for the sake of my family/children *Chi-square = .41; d.f. = 1; n.s*	22	29.7%	16	31.3%
I was raised on a farm/ I have farmed all of my life *Chi-square = 1.03; d.f. = 1; n.s.*	28	37.8%	18	35.2%
I farm for the way of life it provides for me *Chi-square = .83; d.f. = 1; n.s.*	10	13.5%	14	27.4%
I farm for the challenge it provides for me *Chi-square = 1.56; d.f. = 1; n.s.*	14	18.9%	71	13.7%
I farm for the independence it provides for me *Chi-square = .006; d.f. = 1; n.s.*	20	27.0%	19	37.2%
I farm because it is part of my religion/culture, or because I consider farming a "mission" *Chi-square = .02; d.f. = 1; n.s*	14	18.9%	12	23.5
I farm for money *Chi-square = .01; d.f. = 1; n.s.*	6	8.1%	6	11.7

6.4 Analysis of attitudinal variables

6.4.1 Attitudes toward farming

The examination of the attitudes of acquiring and non-acquiring farmers toward farming, at the specific level of investigation (Table 6.12), shows that the attitudes of the two groups differed on only two of the twenty statements (10%) in the scale. The results shown in Table 6.13 reveal no differences between the two groups for any of the five orientation gategories based on the Gasson framework. Table 6.14 shows no differences in the attitudes of the two groups at the general level of investigation.

6.4.2 Attitudes toward Public land disposition

The analysis of the attitudes of acquiring and non-acquiring farmers toward the continuation of Public land disposition shows a difference between the two groups for three of the ten statements (Table 6.15) reflecting the specific level of investigation. Acquiring and non-acquiring farmers' attitudes differed on one of the three categories examined at the intermediate level (Table 6.16). At the general level a significant difference was found in the attitudes of the two groups (Table 6.17).

Table 6.12
Attitudes toward farming (individual statements): acquiring and non-acquiring farmers

Scale items	Cat.	Acq. Mean	Non-acq. Mean	F	< p
1. Farmers should take pride in owning a farm	Exp.	4.29	4.25	1.04	n.s.
2. A successful farmer should not expect to be recognized for his farming achievements	Soc.	2.46	2.41	1.10	n.s.
3. Farmers should be involved in their local farming community	Soc.	4.15	3.90	1.12	.05
4. Farm families are at a disadvantage when they live so far from towns and cities	Cul.	2.81	3.08	1.01	n.s.
5. Farmers should work off-farm to make money to re-invest in the farm	Ins.	2.34	2.65	1.26	n.s.
6. Saving money for retirement should not be a major concern for farmers	Ins.	2.67	3.03	1.03	n.s.
7. Farming should be continued as a family tradition	Soc.	3.73	3.56	1.00	n.s.
8. There is little value in doing farm work	Int.	1.78	2.06	1.04	n.s.
9. Farming allows farmers to be their own boss	Int.	3.83	3.80	1.31	n.s
10. Farmers do not need special special skills to farm	Exp.	1.80	2.08	1.28	n.s.
11. Farming decisions should be made according to a farmer's religious beliefs	Cul.	2.79	2.79	1.15	n.s.

Table 6.12 (cont.)

12. Farm family members should not work on the farm along with the farmer	Soc.	1.58	1.53	1.64	n.s.
13. Farmers should make as much money from farming as they can	Ins.	3.87	3.83	1.27	n.s.
14. Farmers do not enjoy the farm work they do	Int.	1.84	1.68	1.93	n.s.
15. Farming is a healthy outdoor occupation	Int.	3.67	3.63	1.47	n.s.
16. Farmers should not run their farms according to the standards of a religious farming community	Cul.	3.07	2.83	1.03	n.s.
17. The challenge of farming makes the farmer a more capable person	Exp.	4.13	3.81	1.81	.01
18. Farmers should not always try to make their farms more profitable	Ins.	2.27	2.16	1.09	n.s.
19. Farm families benefit from living apart from many of the problems of today's society	Cul.	3.85	3.54	1.34	n.s.
20. Farmers do not get self-respect from farming	Exp.	2.10	1.90	1.90	n.s.

Note: Exp.=Expressive, Cul.=Cultural, Soc.=Social, Int.=Instrumental, and Ins.=Intrinsic

Table 6.13
Attitudes toward farming (orientation categories): acquiring and non-acquiring farmers

Orientation categories	Acquirers Mean	Non-acquirers Mean	F	< p
Cultural	3.14	2.95	1.15	n.s.
Instrumental	3.25	3.25	1.04	n.s.
Expressive	4.08	3.99	1.18	n.s.
Intrinsic	3.96	3.89	1.53	n.s.
Social	3.96	3.97	1.45	n.s.

Table 6.14
Attitudes toward farming (scale scores): acquiring and non-acquiring farmers

	Acquirers Mean	Non-acquirers Mean	F	< p
Scale score	73.50	71.91	1.01	n.s.

Table 6.15
Attitudes toward Public land disposition (individual statements): acquiring and non-acquiring farmers

Statements	Cat.	Acq. Mean	Non-acq. Mean	F	< p
1. Public land should not be made available to farmers when the agricultural economy is depressed	Eco.	2.04	2.28	1.27	n.s.
2. Public land should be made available to farmers, even if the land is needed for the forest industry	Res.	3.11	2.70	1.07	.05
3. Public land should be made available to the sons of local farmers whenever they want to start their own farms	Com.	3.79	3.70	1.21	n.s.
4. Public land should not be made available for farming because of the high cost to the provincial government of providing services to new farming areas	Eco.	1.70	1.85	1.62	n.s.
5. Public land should be made available to farmers to provide an economic benefit to I.D. 23	Eco.	3.90	3.89	1.42	n.s.
6. Public land should not be made available to beginning farmers until the cost of borrowing money to buy and clear land comes down	Com.	2.24	2.63	1.91	.01
7. Public land should be made available to beginning farmers to start their own farm, because farming is a good occupation for young people	Com.	3.67	4.01	1.48	.05

Table 6.15 (cont.)

8. Public land should not be made available to beginning farmers who live outside I.D. 23	Com.	2.73	2.70	1.04	n.s.
9. Public land should be made available for farming even though good farmland may be up for sale elsewhere in Alberta	Eco.	3.93	3.80	1.13	n.s.
10. Public land should not be made available for farming if the land is needed to protect wildlife populations	Res.	3.09	3.05	1.35	n.s.

Note: Eco.=Economic, Res.=Resource, and Com.=Community

Table 6.16
Attitudes toward Public Land disposition (orientation categories): acquiring and non-acquiring farmers

Orientation categories	Acquiring Mean	Non-acquiring Mean	F	< p
Resource	2.96	2.65	1.12	n.s.
Economic	3.98	3.63	1.57	.01
Community	3.52	3.41	2.43	n.s.

Table 6.17
Attitudes toward Public Land disposition (scale scores): acquiring and non-acquiring farmers

	Acquiring Mean	Non-acquiring Mean	F	< p
Scale score	35.95	33.53	2.12	.05

6.5. Interpretation

6.5.1 Non-attitudinal variables

The results in Table 6.1. show that acquiring farmers held more land than expected under the Farm Development Lease and Other land holding types than expected. It appears that acquiring farmers acquired land under a broader range of land holding types than non-acquiring farmers, which suggests two possible conclusions. First, acquiring farmers may have preferred to acquire land under a broader range of types in order to acquire the land they needed to build their farms. Second, given the need to generate income to continue building their farms, acquiring farmers may have been forced to acquire land under a range of types to generate needed income.

Table 6.2 shows that acquiring farmers held significantly larger amounts of Titled land, compared to non-acquiring farmers. Although non-significant, the results in Table 6.2 suggest that non-acquiring farmers, not acquiring farmers, may have held larger amounts of land under Farm Development Sales and Leases. However, Table 6.1. shows that relatively few non-acquiring farmers held land under these two types. Given the small number of non-acquiring farmers with land under either Farm Development Sales or Farm Development Leases, the corresponding averages shown in Table 6.2 may be inaccurate.

Table 6.3 shows that acquiring farmers had significantly larger farms than non-acquiring farmers, yet Table 6.2 shows a significant difference for only the Titled land category. The results in the two tables appear contradictory. This situation, however, is similar to that of Mennonite and non-Mennonite land holdings (see Table 5.13). Since most farmers in the acquiring and non-acquiring groups held Titled land, the significant difference for Titled land is probably the main factor contributing to the difference in average farm size.

Given this conclusion, it can be argued that the result in Table 6.4 follows logically. Acquiring farmers with larger farms can be expected to generate greater incomes. Table 6.4 shows that the incomes of acquiring farmers were significantly greater than those of non-acquiring farmers.

It has been established that acquiring farmers were younger than non-acquiring farmers, and that acquiring farmers had larger farms and higher incomes. These findings suggest that acquiring farmers were, indeed, at earlier stages in their farming careers. It could then be expected that significant differences would exist between the two groups with respect to the number of years they had owned their farms (Table 6.6) and the number of years they had consider farming as a full-time occupation(Table 6.7). However, the two groups did not differ on these two variables, a finding for which there is no apparent explanation.

6.5.2 Attitudinal variables

Given the few significant differences between acquiring and non-acquiring farmers with respect to their attitudes toward farming (Tables 6.12, 6.13, and 6.14), it seems appropriate to conclude that their attitudes toward farming were similar. However, the attitudes of the two groups toward the continuation of Public land disposition are another matter.

The significant result for Statement 2 in Table 6.15 appears to mean that acquiring farmers put their interest in Public land ahead of that of the forest industry in I.D. 23. The significant result for Statement 6 in the table suggests that acquiring farmers did not wish to see barriers imposed (in this case, the high cost of money) which would prevent them from obtaining Public land when needed. The result for Statement 7 seems to indicate that non-acquiring farmers still believed farming to be a good occupation for young people, whereas acquiring farmers may have been less certain that this remained true.

Acquiring farmers had significantly more positive attitudes than non-acquiring farmers for the Economic category, at the intermediate level of investigation (Table 6.16). It is important to remember that scoring was reversed for the negatively-worded statements in the scale (Table 6.15). Reversal of scoring means that the negative statements would be re-worded in the positive. It is, therefore, revealing that acquiring farmers had more positive responses for three of the four Economic statements which suggested continuing to make Public land available, *despite* such factors as a depressed agricultural economy (Statement 1), and the availability of farmland elsewhere in Alberta (Statement 9). These findings may mean that acquiring farmers felt they were entitled to continue to demand Public land, and that they were prepared to assume greater risks to do so.

These findings suggest that acquiring farmers had a greater need for Public land and were prepared to take on more risk when acquiring the land. Their attitudes appeared to be different from those of their non-acquiring counterparts in this respect, a conclusion supported by the result in Table 6.17. It shows that acquiring farmers' attitudes were more positive toward the continuation of Public land disposition in I.D. 23 than those of non-acquiring farmers.

6.6 Summary

To summarize the differences between acquiring and non-acquiring farmers, acquiring farmers were younger, with larger farms and higher incomes. Acquiring farmers also held significantly more positive attitudes toward the continuation of Public land disposition.

It had been hypothesized that acquiring farmers were younger, but the findings related to farm size and income were the opposite of what the hypotheses had predicted. There are two possible explanations for these results. First, in general, farming now requires a greater cash flow to pay for land, machinery and yearly inputs such as fertilizer. More land must be cultivated to produce the crops necessary to generate this cash flow and (hopefully) an annual return on the farmer's investment. Acquiring farmers, who started farms more recently than non-acquiring farmers, may have had little choice but to acquire more land to build larger farms to make their farms profitable. Second, other changes related to agriculture in I.D. 23 may have encouraged younger, acquiring farmers to build larger farms. I.D. 23 is a maturing agricultural region in which larger farms may represent a logical progression of the regional agricultural economy. Transportation improvements may have been a factor as well. After all, it wasn't until 1963 that the region was connected to the rest of western Canada by rail, and the first bridge across the Peace River was not built until 1973. More recently, a new ferry capable of carrying larger grain trucks was brought into service by Alberta Transportation on the Peace River, where Secondary Highway 697 crosses the Peace River (Figure 1). Consequently, these transportation improvements have allowed farmers in I.D. 23, and acquiring farmers in particular, to develop their farms secure in the knowledge that they will be able to move ever-increasing amounts of grain from their farms to market.

These conclusions suggest that the differences between acquiring and non-acquiring farmers were associated with the economics of farming in I.D. 23. The analysis has shown that the attitudes of the two groups toward farming were similar, but that their attitudes toward Public land disposition differed. Acquiring farmers' attitudes toward Public land disposition were more positive than those of non-acquiring farmers. Acquiring farmers' responses to selected statements in Table 6.15 suggested a connection between concern for the economics of farming and maintaining Public land availability. Acquiring farmers also had a more positive Economic orientation toward Public land disposition than non-acquiring farmers. Comments on the questionnaires of two acquiring farmers support the argument about the importance of the economics of farming for the two groups. One farmer wrote, in reference to the Public land acquisition process: "Would appreciate when applying for land that it could be processed quicker and posting be eliminated". Another acquiring farmer supported the continued availability of Public land with this argument: "Land should be available to anyone eligible - some make it and some don't. When those who can't make a go of farming leave, the land then becomes available for the established farmer to expand on to".

In conclusion, the research hypotheses can be reviewed. The first hypothesis predicted that non-acquiring farmers had larger farms than acquiring farmers. The reverse was true, so there is no support for the hypothesis. The second hypothesis suggested that non-acquiring farmers were older than acquiring farmers. There was support for this hypothesis. The third hypothesis predicted that non-acquiring farmers had higher incomes than acquiring farmers. The reverse was true, and there was no support for the hypothesis.

The fourth hypothesis suggested that both groups had similar Cultural attitudes toward farming. There was support for this hypothesis. The fifth hypothesis proposed that acquiring farmers had more positive Expressive attitudes toward farming, but there was no support for this hypothesis. The sixth hypothesis proposed that acquiring farmers had more positive Intrinsic attitudes toward farming, but there was no support for this hypothesis. Non-acquiring farmers, it was argued, had more positive Social attitudes toward farming. There was no support for this seventh hypothesis. The eighth hypothesis proposed that acquiring farmers had more positive Instrumental attitudes than non-acquiring farmers but, again, there was no support for this hypothesis. The ninth hypothesis predicted that the attitudes of acquiring farmers toward farming were more positive than those of non-acquiring farmers, but there was no support for this hypothesis.

The tenth and final hypothesis proposed that acquiring farmers had more positive attitudes toward the continuation of Public land disposition in I.D. 23. There was support for this hypothesis.

Notes

1. There were 37 Mennonite farmers and 28 non-Mennonite farmers in the acquiring group, and 37 Mennonites and 23 non-Mennonites in the non-acquiring group.

CHAPTER SEVEN

CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

Four principal conclusions can be drawn from this study.

First, the examination of Public land acquisition data, obtained from the Alberta government, showed that Mennonite farmers were more active in acquiring Public land for agriculture, and that non-Mennonite farmers, while less active, acquired larger amounts of land on average than Mennonite farmers.

This finding should dispel an assumption common in I.D. 23: that throughout the 1980s, Mennonite farmers acquired much greater amounts of Public land than non-Mennonite farmers. This assumption was found to be prevalent throughout the research process. During the first visit to I.D. 23 in the summer of 1987, this assumption was voiced by agricultural professionals working in I.D. 23. A number of farmers interviewed in I.D. 23 during the field work in the summer of 1988 repeated the assumption. The assumption appeared to be confirmed by the large amounts of land acquired by Mennonite farmers in Special Postings. The assumption was even heard to be repeated, at a late date, by the MLA for the region (Adair, February 23, 1990, pers. comm.).

The findings of this study reject this assumption, placing the Mennonite and non-Mennonite farm groups in their proper perspective in relation to Public land acquisitions. This finding also illustrates a key difference between the Mennonite and non-Mennonite farming communities. The strong Mennonite farming community, with its common identity, appears to foster a coordinated approach to Public land acquisitions. One Public Lands official spoke of working with the

Mennonites on Special Postings, and of the ease with which those Postings were prepared when dealing with a few Mennonite representatives who were able to speak on behalf of the Mennonite farming community (O'Byrne, pers. comm., September 9, 1989). The evidence presented in Chapter Two showed that non-Mennonite farmers were less inclined to participate in Special Postings but still obtained substantial amounts of Public land on an individual basis. The fact that Mennonite farmers often acted in a collective manner in acquiring Public land, and that most non-Mennonite farmers preferred to acquire Public land individually, provides further support for the conclusion reached in Chapter Five about the "social" and "individual" inclinations of the two groups.

Second, the research serves as a correction to previous literature on the expansion of the northern agricultural frontier in Western Canada. In one of the most recent papers on the subject, Vanderhill (1982) reviewed the growth of this frontier in the four western provinces. In his review of developments in the Peace River region of Alberta, Vanderhill observed the continued activity in I.D. 23, and suggested: "The unusual level of demand in this district was in part a response to the growth of a sizeable Mennonite community" (p. 208). However, in summing up his observations on the agricultural frontier in the Peace River region (including I.D. 23), Vanderhill predicted:

> Although the agricultural frontier in the Peace River country remains open, no major advances are anticipated. It is assumed that much of the demand for arable crown land will be associated with farm enlargements and that growth at the margins will involve a few scattered quarter sections (p. 209).

Vanderhill's prediction appears to have been wrong, on three counts. First, the amount of Public land acquired by Mennonite and non-Mennonite farmers between 1984 and 1988 represented a fifteen per cent increase in the size of the agricultural region of I.D. 23. This, it is believed, does constitute a "major advance" of this agricultural frontier. Second, Public land acquisitions were, no doubt, associated with farm enlargements in the region. However, Table 2.5 showed that a significant amount of the Public land acquired was under Special Postings which were held specifically to make land available to beginning farmers to start new farms. Third, much of the growth created by the acquisition of Public land for farming in this region did occur at the margins of the region, but in amounts much greater than "a few scattered quarter sections".

No similar predictions will be made in this study. However, two observations will be offered. First, evidence presented in Chapter Two suggests that the demand for Public land in I.D. 23 was declining toward the end of the 1980s. Fewer farmers were acquiring land under Farm Development Leases (Table 2.3) and fewer farmers were acquiring Public land under Special Postings (Table 2.5). Second, while demand appeared to be declining, there is potential for this demand to increase again. Two factors might cause demand to grow again. A reversal of the economic conditions that have beset farmers farmers in western Canada and I.D. 23 during the 1980s, would make the economics of agricultural land expansion attractive again. In addition, several pockets of good, arable land remain in the region, particularly along the Peace River valley (Adair, pers. comm., February 23, 1990). For many farmers, or for people from farming backgrounds, the prospect of being able to acquire Public land to begin one's own farm can be an attractive prospect. For these reasons, it is possible that the agricultural region of I.D. 23 may grow again in the future.

The third conclusion to be drawn from this study is that some of the hypothesized attitudinal differences did emerge between Mennonite and non-Mennonite farmers. In interpreting these findings, it was possible to suggest an association between the attitudinal, or behavioural differences of the two groups, and their different Public land acquisition behaviours.

One of the principal findings of the study points to the complexity of human behaviour, and of the difficulties in trying to explain human behaviour. While differences between Mennonite and non-Mennonite farmers had been anticipated, those difference that emerged between acquiring and non-acquiring farmers had not. The Mennonite/non-Mennonite dimension was not the only choice in studying the population of farmers in I.D. 23. Furthermore, the analysis of acquiring and non-acquiring farmers provided an additional explanation for the behaviour that was investigated, namely agricultural land expansion.

Fourth, the findings of this study appear to contribute to the research literature on behavioural agricultural geography. The emphasis in this research was to examine an element of the personalities of farmers in I.D. 23 to see whether an association could be made between that element (i.e. attitudes) and their agricultural land expansion behaviour. Having presented the evidence for this association, the conclusions of this study are both similar to, and different from, the results in previous studies (Gasson, 1973; Ilbery, 1983, 1986, 1988).

Table 7.1 shows the overall attitudinal orientations of farmers in I.D. 23. These results suggest that the Expressive orientation was strongest among farmers in I.D. 23, followed by the Social and Intrinsic orientations. The Instrumental orientation was next and not as strong as the previous three categories. The Cultural orientation was the weakest of the five categories. It is these

Table 7.1
Attitudinal orientations of farmers in I.D. 23: Mennonite/non-Mennonite farmers, and acquiring/non-acquiring farmers combined

Category	Mean score
Expressive	4.05
Social	3.94
Intrinsic	3.91
Instrumental	3.27
Cultural	3.02

results which differ from those of previous studies. In reviewing their work, Ilbery (1986) concluded that the studies carried out by Gasson (1973) and Ilbery (1983) showed that: "intrinsic values were emphasized above expressive and instrumental values, with social values having the lowest priority of all." The specific order of these orientations differs between the studies. The results of this study also lend support to one of Ilbery's (1985) conjectures. He questioned whether the value (or attitudinal) orientations of farmers would vary according to the kind of farming practised, and suggested:

> There are two possible solutions to this problem: first, to examine farmers practising different types of farming and ascertain whether values vary accordingly; and secondly, to hold farm type constant and survey a relatively homogeneous group of farmers, to see whether or not significant differences in values still occur. The latter approach was adopted in a study of the goals and values of hope farmers in Hereford and Worcestershire" (p. 42)

A variation of the latter approach was adopted in this study. Farm type was held constant (since most Mennonite or non-Mennonite farmers in I.D. 23 have either grain or mixed farms), while *two* relatively homogeneous groups of farmers were examined for differences in attitudes.

In considering the overall intent of the studies, each is similar. In her investigation, Gasson (1973) said she wanted to find out "what farmers *really want* from their occupation" (p. 521). Her study was an attempt to move away from traditional theories which treated "the goal of behaviour as a parameter since production, exchange, investment and so on are assumed to be undertaken primarily, if not exclusively, in the attempt to maximise money gains, usually in the short run" (p. 522). What all three studies illustrate is that farmers, be they in England or northern Alberta, farm for reasons in addition to earning income. As Ilbery (1986) concluded of the English case studies: "farmers would appear to place more importance upon doing the work they like and being independent than on the income aspects of farming" (p. 29). Of this study it can be concluded that farmers in I.D. 23 place more importance on expressive, intrinsic and social aspects of farming than on the instrumental or income-related aspects. It is worth noting, however, that the notion of farmers farming for the sake of income received some support from the analysis of acquiring and non-acquiring farmers. That analysis suggested that acquiring farmers acquired Public and other types of land for economic reasons related to the economies of scale relevant to agriculture in I.D. 23 in the late 1980s.

7.3 Recommendations for Public Policy and Research

The analysis of acquiring and non-acquiring farmers showed that slightly more than half of the sample had acquired land for farming. From this it could be inferred that half of the farm population in I.D. 23 will continue to demand and acquire land for farming and that demand could remain high.

There are, however, grounds for concluding that demand will not remain high. The analysis showed that Public land was the least popular type of land acquired. A frequent complaint of farmers in I.D. 23 was that Public land prices were too high.[1] Furthermore, Chapter Two showed that demand for land under Farm Development Leases declined from 1984 to 1988.

On the other hand, demand could increase again. First, the price of Public land could decline, making it a more attractive option to farmers looking to expand their farms. Second, I.D. 23 is perhaps the last region in Alberta where Public land has been made available recently for farming. This fact alone may draw farmers from elsewhere in Alberta in the future.[2] Third, there is no reason to assume that another period of prosperity in agriculture in Western Canada, such as that experienced in the 1970s, will not return. If there is a return to prosperity in the agricultural industry, the economics of acquiring and clearing Public land could improve which might also increase the demand for Public land for farming in I.D. 23. The important question then becomes: how much land would be available?

There might not be enough land, for the following reasons. First, most of the top quality agricultural land in I.D. 23 has been claimed. Farmers who opened land in recent years north of Highway 35 often did so on grey-wooded soils. This land can be made productive, providing farmers are willing to invest time and the substantial amounts of money that are necessary to increase the fertility of the soil through fertilization and legume plow-downs.

Second, provincial land use priorities have changed. In the early 1980's, the priority was to make Public land available for agriculture. The Special Posting system was part of an "Accelerated Land Sales Initiative" undertaken by senior staff members of the Public Lands Division in Edmonton. The intiative was the Division's response to the so-called "Horner" report of 1981 (O'Byrne, September 9, 1990, pers. comm.). In that year, former Alberta Cabinet Minister Hugh Horner (Horner, 1981) released a report on Alberta's meat industry in which he concluded that Alberta's cattle industry could be expanded and that I.D. 23 could accomodate much of this expansion. Horner recommended a major program of agricultural land expansion in the north, particularly in I.D. 23. The Special Posting system had been introduced in the year prior to the release of Horner's report. The report's recommendations provided further impetus for the Division's initiative. This "initiative" also coincided with strong Mennonite demand for land.

Now, however, this initiative has run its course. No further Special Postings are anticipated and Mennonite demand for land has declined. Furthermore, a new priority has arisen which could make further agricultural land expansion difficult.

The Alberta government, over the past two to three years, has embarked on an ambitious program of forestry development in northern Alberta. Enormous tracts of land have been designated for timber harvest operations under Forest Management Agreements (FMA's) between the government and several forestry companies. Any further expansion of agriculture in I.D. 23 could be blocked if the land is already held under an FMA.[3]

Third, a number of native land claims have been registered in the region. While few of these claims have been resolved, they may forestall any expansion of agriculture onto land affected by the claims. This array of factors prompts the following recommendation:

> The Public Lands Division, in cooperation with other relevant departments, should prepare a report which says how much arable land remains in I.D. 23. This report should say where this land is located and when, if ever, it might be made available for farming.

To some extent, this report already exists. An inter-departmental report prepared almost a decade ago (Alberta Energy and Natural Resources, 1982) identified potential agricultural land expansion areas in I.D. 23. This report led to the preparation of a specific plan (Alberta Energy and Natural Resources, 1985) for the Jean D'Or Prairie area of I.D. 23. However, the the first report may now be outdated, given the current emphasis on forestry developments.

This recommendation is based on the premise that it would be best for all parties involved, including farmers, municipal and provincial governments, and forestry interests, to know how much arable agricultural land is left in I.D. 23 and where it is located. This knowledge would clear up any misconceptions the farmers of I.D. 23 may have about available land. The results of this study have shown that farmers in I.D. 23 generally support continued Public land disposition, based on their positive attitudes toward this issue. This is particularly true for acquiring farmers. If the agricultural economy does improve, demand for Public land could increase. A clear statement on the future availability of Public land would be useful. Moreover, preparation of the recommended report would give the I.D. 23 farming community a clear picture of how much land is left and how long this supply of land is likely to last. If the supply is less than expected, it would encourage farmers, and residents of I.D. 23 in general, to explore other economic development options. This would prepare the region for the day when less and less of its economic growth will come from agricultural land expansion.

One potential alternative to farming may already exist. It is recommended that:

> The feasibility of small-scale, indpendent woodlot operations should be investigated.

This idea is drawn from Ehlers (1974), who observed that farmers in Northern Canada, unlike their Scandinavian counterparts, fail to utilize the forest resource around them. Private woodlots might be feasible for the following reasons. The switch from agriculture to silviculture might be one that farmers could make. Second, woodlots could be developed on lands with less arable potential. Third, many farmers in I.D. 23 still have relatively substantial amounts of forested land which could be cultivated and re-forested rather than cleared or left untouched. Fourth, much of the forest cover in I.D. 23 is of the softwood variety for which a pulpwood market now exists thanks to the recent forestry developments. Fifth, woodlot operations might reduce the need for off-farm work. This is an important point, since there is no guarantee that existing off-farm work opportunities in the forestry sector will continue to be available. In 1988, one of the largest employers of farmers for off-farm work was the Canadian Forest Products Ltd. (CANFOR) sawmill in High Level. At the time, CANFOR expected to hire fewer and fewer farmers for winter work, because of plans to increase the mechanization of their timber harvesting operations (Brown, August 25, 1988, pers. comm.)[4]

There is one additional recommendation which can be offered:

> Further agricultural research should be carried out in I.D. 23 to determine the full extent of the agricultural potential of the arable land in I.D. 23. The intent of such research should be identify the broadest range possible of crops that can be grown in the region.

The purpose of this recommendation is to open up as many cropping options as possible for farmers in I.D. 23. There may have been too much reliance in the past on barley, wheat and canola. Given a finite supply of Public land, it may be in the best interests of farmers in I.D. 23 to have cropping options available to them beyond the traditional choices. Research of this type has been carried out for years by the Agriculture Canada Experimental Farm at Fort Vermilion. This research should receive continued support and, where possible, be expanded.

7.4 Epilogue

In some respects, this study has covered very little new ground. Agricultural land expansion is, after all, an issue which has been examined before. However, when compared to previous studies, some new ground has been covered.

Consider the report of the Alberta Land Use Forum of the mid-1970s and the Environment Council of Alberta (ECA) report on Maintaining and Expanding the Agricultural Land Base in Alberta, which was released in the early 1980s. Listed under Conclusion of Future Land Needs, the former report flatly stated: "We see no reason for any large scale development that would increase the land base at this time". (Alberta Land Use Forum, 1976, p. 169). Several years later, the ECA report would only recommend that small scale agricultural land expansion be confined to the fringes of existing agricultural regions (Environment Council of Alberta, 1985).

The opposing point of view was evident in the aforementioned Horner report (Horner, 1981). In 1983, the Northern Alberta Development Council approved a similar recommendation: "The Northern Alberta Development Council recognizes and supports the goal set by Alberta Energy and Natural Resources to make available 250,000 acres of public land annually in the northwest for the next five years, and recommends that effective implementation take place" (Northern Alberta Development Council, 1983, p. 18). This same report contained other recommendations which supported continued agricultural land expansion.

These contrasting recommendations highlight the ongoing debate about the wisdom of continuing agricultural land expansion in I.D. 23, and elsewhere in the Peace River region of Alberta. Critics of the process have often criticized the cost of continued agricultural land expansion: "Clearly, the expansion of agricultural land ... represents a significant direct cost to the Provincial Government over and above any direct revenue stream" (Woods Gordon, 1983, p. 1.22). Other critics of agricultural land expansion have pointed to the remaining lower quality soils in I.D. 23, or to the variable weather, as factors which argue against opening new land for agriculture.

Despite the criticism, no serious consideration has ever been given to cutting off the supply of Public land, which would bring an end to agricultural land expansion in I.D. 23. Nor, however, have the critics been ignored. The advice and recommendations of the various reports have been considered and, in some cases, implemented. Experience gained in administering the disposition of Public land in I.D. 23 led to improvements in the process. The implementation of the Integrated Resource Planning system in the early 1980s "was a major step forward " (Adair, February 23, 1990, pers. comm.) in resolving outstanding issues related to Public land disposition for agriculture.

In contrast to the studies cited above, the importance of this study has been im emphasizing the role of the farmers of I.D. 23 in relation to agricultural land expansion. It has been demonstrated that farming is more than simply a means of making a living for these farmers, regardless of whether they are Mennonite or non-Mennonite, acquiring or non-acquiring. Beyond the financial committments which farmers in I.D. 23 have to their farms, they also have meaningful personal and emotional ties to the land and their farms. If it were proposed that all further agricultural land expansion be suspended in I.D. 23, this would be a difficult decision to explain to the region's farmers. Having invested so much of themselves in their farms, they have shown that the region is agriculturally viable. Given the conclusions reached about the need for acquiring farmers to acquire new land to maintain larger farming operations, an end to new land acquisitions might be a damaging blow to them.

Eventually such a decision must be made if it is accepted that the supply of arable land in I.D. 23 is finite. This decision, however, should not be made prematurely, nor for the wrong reasons. Between now and the time when this decision is made, the farmers of I.D. 23 should be allowed to continue to develop and own their own farms.

Notes

1. Public land prices are set by the Public Lands Division and are based on an assessment of the value of the land carried out by the Division. Prices do fluctuate, but tend to lag behind the price of the land set by market conditions.
2. Several farmers interviewed in I.D. 23 spoke of meeting farmers from elsewhere in Alberta and other parts of Canada who had visited I.D. 23 to investigate the possibility of acquiring land.
3. The southwestern margin of the settled Mennonite agricultural lands is now in close proximity to the northern edge of the Forest Management Agreement (FMA) area assigned to the Peace River Pulp Mill at Peace River, which is owned by Daishowa Canada Co. Ltd.
4. The Canadian Forest Products Limited (CANFOR) sawmill in High Level was purchased in February, 1990 by Daishowa Canada Co. Limited, and re-named High Level Forest Products Ltd. There has been no indication of the effect which this purchase will have, if any, on logging operations in I.D. 23, or on off-farm employment opportunities in the winter months.

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APPENDIX

FARMER QUESTIONNAIRE

1) COULD YOU PLEASE TELL ME HOW MANY YEARS, IN TOTAL, FARMING HAS BEEN YOUR FULL-TIME OCCUPATION?

____

2) COULD YOU PLEASE TELL ME HOW MANY YEARS YOU HAVE HAD YOUR OWN FARM IN IMPROVEMENT DISTRICT 23 (I.D. 23)?

____

3) COULD YOU PLEASE TELL ME WHY YOU FARM? IS FARMING A MEANINGFUL ACTIVITY FOR YOU? IF SO, WHY?

____

____

____

____

4) IN THIS NEXT SECTION OF THE QUESTIONNAIRE, THERE ARE A NUMBER OF STATEMENTS THAT REPRESENT FEELINGS OR OPINIONS ABOUT FARMING. PLEASE ANSWER THESE STATEMENTS BY CIRCLING A NUMBER BESIDE THE ANSWER THAT BEST MATCHES YOUR OWN REACTION TO THE STATEMENT, WHETHER IT IS "I STRONGLY DISAGREE", "I DISAGREE", "I'M UNDECIDED" AND SO ON. PLEASE ANSWER ALL STATEMENTS.

A) FARMERS SHOULD TAKE PRIDE IN OWNING A FARM.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

B) A SUCCESSFUL FARMER SHOULD NOT EXPECT TO BE RECOGNIZED FOR HIS FARMING ACHIEVEMENTS.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

C) FARMERS SHOULD BE INVOLVED IN THEIR LOCAL FARMING COMMUNITY.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

D) FARM FAMILIES ARE AT A DISADVANTAGE WHEN THEY LIVE SO FAR FROM TOWNS AND CITIES.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

E) FARMERS SHOULD WORK OFF-FARM TO MAKE MONEY TO RE-INVEST IN THE FARM.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

F) SAVING MONEY FOR RETIREMENT SHOULD NOT BE A MAJOR CONCERN FOR FARMERS.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

G) FARMING SHOULD BE CONTINUED AS A FAMILY TRADITION.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

H) THERE IS LITTLE VALUE IN DOING FARM WORK.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

I) FARMING ALLOWS FARMERS TO BE THEIR OWN BOSS.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

J) FARMERS DO NOT NEED SPECIAL SKILLS TO FARM.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

K) FARMING DECISIONS SHOULD BE MADE ACCORDING TO A FARMERS RELIGIOUS BELIEFS.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

L) FARM FAMILY MEMBERS SHOULD NOT WORK ON THE FARM ALONG WITH THE FARMER.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

M) FARMERS SHOULD MAKE AS MUCH MONEY FROM FARMING AS THEY CAN.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

N) FARMERS DO NOT ENJOY THE FARM WORK THEY DO.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

O) FARMING IS A HEALTHY OUTDOOR OCCUPATION.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

P) FARMERS SHOULD NOT RUN THEIR FARMS ACCORDING TO THE STANDARDS OF A RELIGIOUS FARMING COMMUNITY.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

Q) THE CHALLENGE OF FARMING MAKES THE FARMER A MORE CAPABLE PERSON.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

R) FARMERS SHOULD NOT ALWAYS TRY TO MAKE THEIR FARMS MORE PROFITABLE.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

S) FARM FAMILIES BENEFIT FROM LIVING APART FROM MANY OF THE PROBLEMS OF TODAY'S SOCIETY.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

T) FARMERS DO NOT GET SELF-RESPECT FROM FARMING.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

THE NEXT SECTION OF THE QUESTIONNAIRE ASKS FOR INFORMATION ABOUT YOUR FARM, AND WHETHER OR NOT YOU HAVE EXPANDED YOUR FARM IN SOME WAY IN THE PAST FIVE YEARS.

5) COULD YOU PLEASE TELL ME WHAT KIND OF FARM OPERATION YOU ARE RUNNING? WHAT DO YOU EMPHASIZE MOST ON YOUR FARM? **(PLEASE CIRCLE A NUMBER)**

1 GRAINS AND OILSEEDS (IE: WHEAT, BARLEY, CANOLA, ETC.)
2 FORAGE SEED OR CROPS (IE: ALFALFA, BROME, RED CLOVER, ETC.)
3 LIVESTOCK (IE: CATTLE, HOGS, SHEEP, GOATS, ETC.)
4 COMBINATION A (IE: GRAINS AND OILSEEDS AND FORAGE SEED OR CROPS)
5 COMBINATION B (IE: GRAIN AND OILSEEDS AND LIVESTOCK)
6 COMBINATION C (IE: FORAGE SEED OR CROPS AND LIVESTOCK)
7 DAIRYING
8 POULTRY
9 OTHER TYPE? (PLEASE SPECIFY:______________________________)

6) COULD YOU PLEASE TELL ME HOW MANY QUARTERS OF LAND YOU HAVE CLEAR TITLE TO?

____

7) HOW MANY QUARTERS DO YOU HAVE UNDER A FARM DEVELOPMENT SALE AGREEMENT ~~(FDS)~~?

____

8) HOW MANY QUARTERS DO YOU HAVE UNDER A FARM DEVELOPMENT LEASE AGREEMENT (FDL)?

____

9) HOW MANY QUARTERS DO YOU LEASE, ON A CASH-RENT BASIS (IE: FROM ANOTHER FARMER)?

____

10) HOW MANY QUARTERS OF LAND DO YOU HAVE UNDER OTHER TYPES OF AGREEMENT (IE: GRAZING LEASE OR PERMIT, CULTIVATION PERMIT, ETC.)

____

11) COULD YOU PLEASE TELL ME HOW MANY QUARTERS OF LAND YOU HAVE, IN TOTAL? (THIS AMOUNT SHOULD EQUAL THE AMOUNTS LISTED ABOVE IN QUESTIONS 6 THROUGH 10)

____

12) SINCE 1984 (INCLUDING 1984) HAVE YOU ACQUIRED LAND IN I.D. 23 FROM THE PUBLIC LANDS DIVISION OF THE DEPARTMENT OF FORESTRY, LANDS AND WILDLIFE, TO CLEAR THE LAND FOR FARMING? (PLEASE CIRCLE 1 OR 2)

1 YES (**PLEASE GO TO QUESTION 13**)
2 NO (**PLEASE GO TO QUESTION 16**)

13) PLEASE FILL IN THE CHART BELOW.

1) CIRCLE A NUMBER, OR NUMBERS, IN THE FIRST COLUMN, DEPENDING ON THE YEAR OR YEARS IN WHICH YOU GOT LAND FROM PUBLIC LANDS.

2) IN THE SECOND COLUMN PLEASE WRITE IN THE NUMBER OF QUARTERS YOU GOT.

3) IN THE THIRD COLUMN, CIRCLE A NUMBER BELOW THE METHOD USED TO GET THE LAND.

YEAR		NUMBER OF QUARTERS	METHOD OF ACQUISITION		
			REGULAR POSTING	BLOCK POSTING	AUCTION OR TENDER
1	1984	________	1	2	3
2	1985	________	1	2	3
3	1986	________	1	2	3
4	1987	________	1	2	3
5	1988	________	1	2	3

14) COULD YOU PLEASE TELL ME HOW YOU FINANCED THE ACQUISITION OF THIS LAND? (**PLEASE CIRCLE A NUMBER, OR NUMBERS**)

1 GENERAL FARM REVENUES
2 OFF-FARM EMPLOYMENT EARNINGS
3 COMMERCIAL LOAN
4 ADC BEGINNING-FARMER LOAN
5 FAMILY LOAN
6 SALE OF ASSETS
7 OTHER METHOD? (**PLEASE SPECIFY:**__________________)

15) COULD YOU PLEASE BRIEFLY TELL ME WHY YOU GOT PUBLIC LAND?

____

____

____

16) SINCE 1984 (INCLUDING 1984) HAVE YOU ACQUIRED LAND IN I.D. 23 THROUGH A PRIVATE SALE?

1 YES (PLEASE GO TO QUESTION 17)
2 NO (PLEASE GO TO QUESTION 20)

17) PLEASE FILL IN THE CHART BELOW.

1) CIRCLE A NUMBER BESIDE THE YEAR, OR YEARS, IN WHICH YOU GOT PRIVATE LAND.

2) WRITE IN THE AMOUNT OF LAND YOU GOT IN THAT YEAR.

YEAR	NUMBER OF QUARTERS
1 1984	____________
2 1985	____________
3 1986	____________
4 1987	____________
5 1988	____________

18) COULD YOU PLEASE TELL ME HOW YOU FINANCED THE PURCHASE OF THIS LAND?

1 GENERAL FARM REVENUES
2 OFF-FARM EMPLOYMENT EARNINGS
3 COMMERCIAL LOAN
4 FAMILY LOAN
5 SALE OF ASSETS
6 OTHER METHOD? (PLEASE SPECIFY: ____________)

19) COULD YOU BRIEFLY TELL ME WHY YOU DECIDED TO GET THIS LAND?

____

____

____

20) ARE YOU FARMING ON MORE LAND NOW THAN YOU WERE IN 1984? IS YOUR FARM BIGGER NOW, EVEN THOUGH YOU MAY NOT HAVE ACQUIRED LAND FROM PUBLIC LANDS OR THROUGH A PRIVATE SALE? (PLEASE CIRCLE A NUMBER)

1 YES (PLEASE GO TO QUESTION 21)
2 NO (PLEASE GO TO QUESTION 24)

21) PLEASE FILL IN THE CHART BELOW.

1) CIRCLE A NUMBER BESIDE THE YEAR IN WHICH THE INCREASE IN ACREAGE OCCURRED.

2) IN THE SECOND COLUMN, PLEASE WRITE IN THE NUMBER OF QUARTERS, OR ACRES (IF LESS THAN A QUARTER) THAT WERE ADDED TO YOUR FARM IN A GIVEN YEAR.

3) IN THE THIRD COLUMN, PLEASE CIRCLE A NUMBER UNDERNEATH THE METHOD USED TO ADD THE ACREAGE.

				METHOD OF INCREASE		
YEAR		QUARTERS	/ ACRES	LEASED CLEARED LAND	FINISHED CLEARING MY OWN LAND	OTHER METHODS
1	1984	______	______	1	2	3
2	1985	______	______	1	2	3
3	1986	______	______	1	2	3
4	1987	______	______	1	2	3
5	1988	______	______	1	2	3

22) COULD YOU PLEASE TELL ME HOW YOU FINANCED THE ADDITION OF LAND TO YOUR FARM, AS SHOWN ABOVE? (PLEASE CIRCLE A NUMBER, OR NUMBERS)

1 GENERAL FARM REVENUES
2 OFF-FARM EMPLOYMENT EARNINGS
3 COMMERCIAL LOAN
4 ADC BEGINNING-FARMER LOAN
5 FAMILY LOAN
6 SALE OF ASSETS
7 OTHER METHOD? (PLEASE SPECIFY: ________________)

23) COULD YOU PLEASE BRIEFLY TELL ME WHY YOU DECIDED TO ADD THIS ADDITIONAL LAND TO YOUR FARM?

____

____

____

24) SINCE 1984 (INCLUDING 1984) HAVE YOU TRIED TO GET LAND FROM PUBLIC LANDS, TO ADD TO YOUR FARM, BUT FOUND YOU COULD NOT GET ANY? **(PLEASE CIRCLE A NUMBER)**

1 YES **(PLEASE GO TO QUESTION 25)**
2 NO **(PLEASE GO TO QUESTION 26)**

25) WHY COULD YOU NOT GET THE LAND YOU WANTED? **(PLEASE CIRCLE A NUMBER, OR NUMBERS)**

1 THERE WAS NO LAND AVAILABLE
2 ANY AVAILABLE LAND WAS TOO FAR AWAY
3 THE LAND WAS RESERVED FOR USE BY FORESTRY
4 I APPLIED FOR LAND IN A REGULAR POSTING, BUT THE LAND WAS AWARDED TO SOMEONE ELSE
5 I APPLIED FOR LAND IN A BLOCK POSTING, BUT MY NAME WAS NOT DRAWN
6 OTHER REASONS? **(PLEASE SPECIFY: ______________________________)**

26) SINCE 1984 (INCLUDING 1984) HAVE YOU THOUGHT ABOUT TRYING TO GET LAND FROM PUBLIC LANDS AND THEN DECIDED AGAINST THE IDEA? **(PLEASE CIRCLE A NUMBER)**

1 YES **(PLEASE GO TO QUESTION 27)**
2 NO **(PLEASE GO TO QUESTION 28)**

27) COULD YOU PLEASE TELL ME WHY YOU DECIDED NOT TO GET LAND FROM PUBLIC LANDS? **(PLEASE CIRCLE A NUMBER, OR NUMBERS)**

1 I DECIDED I DID NOT NEED ANY MORE LAND
2 GETTING MORE LAND WOULD HAVE MEANT TAKING ON MORE DEBT, WHICH I DID NOT WANT TO DO.
3 THE COST OF THE LAND WAS TOO HIGH
4 THE COST OF CLEARING THE LAND WAS TOO HIGH
5 I DECIDED TO WAIT FOR BETTER COMMODITY PRICES, TO BE IN A BETTER POSITION TO PAY FOR MORE LAND
6 OTHER REASONS? **(PLEASE SPECIFY: ______________________________)**

28) BELOW IS A SET OF STATEMENTS REPRESENTING OPINIONS ABOUT AGRICULTURAL EXPANSION IN I.D. 23. IN THESE STATEMENTS, "PUBLIC LAND" REFERS TO LAND AVAILABLE TO FARMERS THROUGH THE PUBLIC LANDS BRANCH OF THE FORESTRY, LANDS AND WILDLIFE DEPARTMENT. PLEASE ANSWER EACH STATEMENT BY CIRCLING A NUMBER BESIDE THE CATEGORY THAT BEST MATCHES YOUR REACTION. PLEASE ANSWER ALL STATEMENTS.

A) PUBLIC LAND SHOULD NOT BE MADE AVAILABLE TO FARMERS WHEN THE AGRICULTURAL ECONOMY IS DEPRESSED.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

B) PUBLIC LAND SHOULD BE MADE AVAILABLE TO FARMERS, EVEN IF THE LAND IS NEEDED FOR THE FOREST INDUSTRY.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

C) PUBLIC LAND SHOULD BE MADE AVAILABLE TO THE SONS OF LOCAL FARMERS WHENEVER THEY WANT TO START THEIR OWN FARMS.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

D) PUBLIC LAND SHOULD NOT BE MADE AVAILABLE FOR FARMING BECAUSE OF THE HIGH COST TO THE PROVINCIAL GOVERNMENT OF PROVIDING SERVICES TO NEW FARMING AREAS.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

E) PUBLIC LAND SHOULD BE MADE AVAILABLE TO FARMERS TO PROVIDE AN ECONOMIC BENEFIT TO I.D. 23.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

F) PUBLIC LAND SHOULD NOT BE MADE AVAILABLE TO BEGINNING FARMERS UNTIL THE COST OF BORROWING MONEY TO BUY AND CLEAR LAND COMES DOWN.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

G) PUBLIC LAND SHOULD BE MADE AVAILABLE TO BEGINNING FARMERS TO START THEIR OWN FARMS, BECAUSE FARMING IS A GOOD OCCUPATION FOR YOUNG PEOPLE.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

H) PUBLIC LAND IN I.D. 23 SHOULD NOT BE MADE AVAILABLE TO BEGINNING FARMERS WHO LIVE OUTSIDE I.D. 23.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

I) PUBLIC LAND SHOULD BE MADE AVAILABLE FOR FARMING EVEN THOUGH GOOD FARMLAND MAY BE UP FOR SALE ELSEWHERE IN ALBERTA.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

J) PUBLIC LAND SHOULD NOT BE MADE AVAILABLE FOR FARMING IF THE LAND IS NEEDED TO PROTECT WILDLIFE POPULATIONS.

1 I STRONGLY DISAGREE
2 I DISAGREE
3 I'M UNDECIDED
4 I AGREE
5 I STRONGLY AGREE

THE REMAINING QUESTIONS ASK FOR BACKGROUND INFORMATION ABOUT YOU. THIS INFORMATION, AS WITH ALL INFORMATION FROM YOUR QUESTIONNAIRE, WILL BE HELD IN CONFIDENCE. I WILL BE THE ONLY PERSON THAT EVER SEES YOUR ANSWERS.

29) HOW OLD WERE YOU ON YOUR MOST RECENT BIRTHDAY?

____

30) COULD YOU PLEASE INDICATE WHAT YOUR GROSS INCOME WAS IN 1987? (INCLUDING EARNINGS FROM OFF-FARM WORK WITH GENERAL FARM REVENUES). **PLEASE CIRCLE A NUMBER TO SHOW THE RIGHT INCOME CATEGORY.**

1 $250,000 OR MORE
2 $100,000 - $249,999
3 $50,000 - $99,999
4 $25,000 - $49,999
5 $10,000 - $24,999
6 $5,000 - $9,999
7 $2,500 - $4,999
8 $2,500 OR LESS

31) HAVE YOU DONE OFF-FARM WORK SINCE 1984 (INCLUDING 1984)? **(PLEASE CIRCLE A NUMBER).**

1 YES (PLEASE GO TO QUESTION 32)
2 NO (PLEASE GO TO QUESTION 34)

32) HOW OFTEN DID YOU DO OFF-FARM WORK?

1 ONE YEAR?
2 TWO YEARS?
3 THREE YEARS?
4 FOUR YEARS?
5 EVERY YEAR?

33) WOULD YOU HAVE BEEN ABLE TO KEEP FARMING WITHOUT THE MONEY YOU MADE FROM OFF-FARM WORK?

1 YES
2 NO

34) COULD YOU PLEASE TELL ME TO WHICH OF THE FOLLOWING CHURCHES YOU GO TO, OR BELONG TO?

1 CATHOLIC
2 UNITED CHURCH
3 MENNONITE
4 ANGLICAN
5 OTHER PROTESTANT
6 NONE
7 OTHER DENOMINATION? (PLEASE SPECIFY: ______________________________)

35) DO YOU HAVE CHILDREN? (PLEASE CIRCLE A NUMBER)

1 YES (PLEASE GO TO QUESTION 36)
2 NO (THERE ARE NO MORE QUESTIONS THAT APPLY TO YOU. THANK YOU FOR COMPLETING THIS QUESTIONNAIRE)

36) HOW MANY CHILDREN DO YOU HAVE?

__________ SONS
__________ DAUGHTERS

37) DO ANY OF YOUR SONS OR DAUGHTERS HAVE THEIR OWN FARMS IN I.D. 23? (PLEASE CIRCLE NUMBER)

1 YES (PLEASE GO TO QUESTION 38)
2 NO (THERE ARE NO MORE QUESTIONS THAT APPLY TO YOU. THANK YOU FOR ANSWERING THIS QUESTIONNAIRE)

38) HOW MANY OF YOUR SONS AND/OR DAUGHTERS HAVE THEIR OWN FARMS IN I.D. 23?

__________ SONS
__________ DAUGHTERS

39) HOW MANY OF YOUR SONS OR DAUGHTERS THAT HAVE THEIR OWN FARMS IN I.D. 23, GOT THOSE FARMS AND BEGAN FARMING IN THE LAST FIVE YEARS (SINCE 1984)?

__________ SONS
__________ DAUGHTERS

40) DID YOU GIVE YOUR SONS OR DAUGHTERS THAT STARTED FARMING IN I.D. 23 IN THE PAST FIVE YEARS SUBSTANTIAL HELP TO START FARMING(IE: LOANS, OR EQUIPMENT THEY COULD BORROW) TO THE POINT WHERE YOUR CHILDREN COULD NOT HAVE STARTED FARMING WITHOUT YOUR HELP?

1 YES
2 NO

41) HOW MANY OF YOUR SONS OR DAUGHTERS ARE YOU CERTAIN WILL START THEIR OWN FARMS IN I.D. 23 IN THE FUTURE?

__________ SONS
__________ DAUGHTERS

IF THERE ARE ANY COMMENTS THAT YOU WOULD LIKE TO MAKE ABOUT THE QUESTIONS, PLEASE DO SO BELOW.

____
____
____
____
____
____
____

THANK YOU FOR TAKING THE TIME TO COMPLETE THE QUESTIONNAIRE